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Tariff Information Series—No. 12

COTTON YARN

Import and Export Trade In Relation to the Tariff

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Acknowledgement is appreciatively made of the assistance rendered by customs officials in the detailed investigation as to the character and uses of imported cotton yarns. Special compilations were made by the appraisers of the port at Philadelphia, Chicago, Boston, Hartford, Bridgeport, and Providence. New York was the main center of the investigation and we are especially indebted to Special Deputy Appraiser George W. Wolf and to Examiners Otto Fix and Robert Hughes of that port for their cordial cooperation with our working force. Acknowledgement should also be made of the assistance rendered by importers, spinners, and consumers of cotton yarn in furnishing information which was invaluable in rounding out a complete and accurate study.

The Commission wishes to make acknowledgement of the services of Mr. W. A. Graham Clark, special expert, of the staff of the Commission, in the preparation of this report. Mr. Clark was assisted by Mr. Henry Chalmers, special expert, also of the staff of the Commission. The statistical tables were compiled by Miss Blanche C. Howlett.

TARIFF ACT OF OCTOBER 3, 1913.

TEXT OF SCHEDULE I PROVIDING FOR COTTON YARNS AND COTTON THREADS.

250. Cotton thread and carded yarn, warps, or warp yarn, whether on beams or in bundles, skeins, or cops, or in any other form, not combed, bleached, dyed, mercerized, or colored, except spool thread of cotton, crochet, darning and embroidery cottons, hereinafter provided for, shall be subject to the following rates of duty:

Numbers up to and including number nine, 5 per centum ad valorem; exceeding number nine and not exceeding number nineteen, 7½ per centum ad valorem; exceeding number nineteen and not exceeding number thirty-nine, 10 per centum ad valorem; exceeding number thirty-nine and not exceeding number forty-nine, 15 per centum ad valorem; exceeding number forty-nine and not exceeding number fifty-nine, 17½ per centum ad valorem; exceeding number fifty-nine and not exceeding number seventy-nine, 20 per centum ad valorem; exceeding number seventy-nine and not exceeding number ninety-nine, 22½ per centum ad valorem; exceeding number ninety-nine, 25 per centum ad valorem. When combed, bleached, dyed, mercerized, or colored, they shall be subject to the following rates of duty: Numbers up to and including number nine, 7½ per centum ad valorem; exceeding number nine and not exceeding number nineteen, 10 per centum ad valorem; exceeding number nineteen and not exceeding number thirty-nine, 12½ per centum ad valorem; exceeding number thirty-nine and not exceeding number forty-nine, 17½ per centum ad valorem; exceeding number forty-nine and not exceeding number fifty-nine, 20 per centum ad valorem; exceeding number fifty-nine and not exceeding number seventy-nine, 22½ per centum ad valorem; exceeding number seventy-nine and not exceeding number ninety-nine, 25 per centum ad valorem; exceeding number ninety-nine, 27½ per centum ad valorem. Cotton waste and flocks, manufactured or otherwise advanced in value, cotton card laps, roping, sliver, or roving, 5 per centum ad valorem.

251. Spool thread of cotton, crochet, darning, and embroidery cottons, on spools, reels, or balls, or in skeins, cones, or tubes, or in any other form, 15 per centum ad valorem.

INTRODUCTION, SUMMARY, AND CONCLUSIONS.

INTRODUCTION.

The purpose of this report is to set forth the conditions affecting the import of cotton yarns into the United States and to bring together, in a form available for ready reference, such data as are needed in a consideration of the tariff. Cotton sewing thread and yarn put up for retail sale are treated only incidentally to the main subject of cotton yarn for further use in manufacturing.

An important feature of the report is a study of the cotton yarn imports during the fiscal year 1918 as compared with 1914, the last normal prewar year. In view of the lack of precise knowledge in the past as to the character of our cotton yarn imports and the needs which they supply, it was found necessary to make a special investigation of all cotton yarn shipments entered at the various ports of the United States during the two periods mentioned. Much of the information thus obtained has hitherto not been generally known and it affords data directly pertinent for tariff purposes. These cross-sections of the import trade, taken in typical years, are set forth in Chapters III and IV. They supplement and furnish a new basis for interpreting the published statistics, presented in Chapter II, in which are discussed the general character and the trend of the import trade over a period of years.

The American export trade in cotton yarn and its rapid expansion during the war, are made the subject of a close analysis, in Chapter V, in order to ascertain the nature of the domestic yarns that are able to meet competition abroad, and the relation of the export to the import trade.

The significant material of the earlier chapters is used in Chapter VI as a foundation for a discussion of the most harmonious and scientific method of adjusting tariff rates when levied on cotton yarn and sewing thread. There are included recommendations as to the form of wording and as to differentials on advanced yarns, such as seem to be advisable and applicable under any general policy that Congress may see fit to adopt.

As an appendix there are added data and discussions that appear necessary to a complete picture of the import trade in the correct perspective.

After a brief discussion of the international trade in cotton yarn and the possible sources of imports there is a comparison of American and foreign import duties on cotton yarn. This comparison is illustrated graphically and an analysis is presented of the various foreign tariff provisions, including differentials on advanced yarns and special treatment of sewing thread and of yarns for retail trade, for their suggestive value in any readjustment that may be undertaken of the American schedules.

Under the heading of "Yarn price data" the main feature is the inclusion of the invoice prices of all imports of 78s cotton yarns during 1914 and 1918.

The report closes with a digest of the leading decisions relating to cotton yarn and sewing thread.

SUMMARY.

The United States consumes more pounds of raw cotton and spins more pounds of cotton yarn than any other country. It produces over 99 per cent of the cotton yarns required for domestic industry, in fact, the import and export trade together do not amount to 1 per cent of the domestic production.

Of the cotton yarns imported into this country, the United Kingdom supplies not only the greater part, about 85 per cent, but also the greater part in each line with the exception of three. Polished yarns and Turkey-red yarns are normally most largely from Germany, and embroidery yarns from Switzerland.

The largest import is of lace yarns for the lace curtain and Levers lace industries. The second largest import is of soft-spun yarns for mercerization and for combination with silk; this includes yarns for knitting, for embroidering, and for interweaving with silk in ribbons, hatbands, and broad silks.

Cotton yarns are used for a great variety of purposes and in tariff discussions this fact is sometimes apparently overlooked and attention centered on weaving yarns, whereas imports are mainly other than weaving yarns. Of the yarns that are imported for weaving the largest portion is for weaving with silk; some is for weaving with wool and mohair, and only a comparatively small amount enters into the manufacture of cotton cloths, the most of which are specialties such as voile, crêpe, and towels.

Very few yarn imports are directly competitive and most of them are supplemental only, either because of no domestic supply (this applies to prepared yarns for lace and labels, to Turkey-red yarns for towels and labels, and to fine counts in general) or because there is a demand for a kind of yarn not readily obtainable in the United States—this applies particularly to mulespun Egyptian yarns in *special counts or plies.*

Imports of cotton yarn range from 1¼s two-ply up to 260s two-ply. A large number of counts and plies are imported but most of them in small quantities. Those imported in appreciable quantities are limited and may be listed in numerical order as 16s, 30s, 36s, 38s, 39s, 40s, 58s, 59s, 60s, 68s, 70s, 76s, 78s, 97s, 98s, 100s, 120s, and 140s. The main count imported prior to 1914 was 60s. In 1914 the main count was 78s, but considering 59s and 60s as variations of 58s, the last named may be stated to have been the main point of contact. In 1918 the importation of 78s far exceeded all others.

The range from 60s to 79s has always offered the most competition. Before the war the import of yarns coarser than this chief competitive range was larger than the imports of counts finer, but during the war this condition was reversed. The trend toward a larger relative import of fine yarns became very noticeable in 1914 and the war apparently only accentuated this tendency.

In regard to the yarn ranges fixed by the act of 1913, the substitution of 48s for 50s, and of 58s for 60s, has been noticeable in the import trade. But, as 38s, 78s, and 98s are normal and usual counts, fixing the tariff divisions at 39s, 79s, and 99s, has had little effect. According to the commercial practice prevailing here and in England a two to three per cent variation is allowable in the yarn count so it has been necessary for foreign spinners to make but few adjustments to heavy up their counts, as 80s for instance would normally pass as 79s and 100s as 99s.

Normally about 60 per cent of the imports were carded and only 40 per cent combed. The war reversed this condition. The change was due not only to the larger proportion of fine counts, but also to special requirements.

Imported yarns are for the most part two-ply unbleached yarns mulespun in England of Egyptian cotton. The import of yarns made of American upland or other cottons is relatively small. The import of single yarns is relatively small and confined mainly to those of special quality or finish. The import of multiple-ply yarns is negligible. Harness twine is apparently the only cabled yarn imported, and that in small amounts.

The import of yarns other than in the gray (unbleached) state is small. Dyed yarn is imported to a small extent for the towel and the label industries because fast yarns of the required color are, or have been, unobtainable locally; and some dyed yarns are imported for the polished yarn industry, for hosiery, for embroidery, and for weaving with silk. Imports of bleached yarns are very small; these are normally for use in the embroidery, hosiery, or polished yarn industries.

About *60 per cent* of the yarns imported have normally been *subjected to special finishing* processes, such as gassing, preparing, mercerizing, or polishing. Over a third of the total import of cotton yarn is normally gassed and the fact that it is gassed is a leading reason for import. From a fifth to a third of the imports are "prepared"; preparing is a yarn-flattening process that only obtains abroad and therefore was one of the main reasons for such import. Mercerization is as cheap here as abroad and the small importations in this finish are due partly to individual preferences and partly to convenience. It is sometimes an advantage to buy the yarns required already mercerized rather than to import in the plain and wait until they can be mercerized in this country. The importation of polished yarns is small.

In general, yarns are imported because of special quality or finish rather than because of price. The firm that ranked as the leading importer in 1914 states:

> Under normal conditions before the war, imported yarns could never compete with domestic yarns as we always sold our imported yarns at a higher price than the domestic numbers were quoted by spinners. All our customers who made fine goods of silk and cotton mixed preferred the imported yarns on account of their being gassed, which made them more lustrous, and also because these imported yarns were more even and freer from imperfections than domestic yarns of similar counts.

Testimony is unanimous that imports of counts above 120s are practically without competition and that above 80s there has been but slight competition from domestic spinners. A large portion of the coarse and medium counts which were at times imported and sold cheaper than the domestic were imported primarily not because of price but because they were spun, doubled, or finished, in qualities not obtainable in the United States.

The effect of the war on the character of yarns imported is especially noticeable in the importation of two new lines, namely, fine yarns for the sueded glove industry and fine yarns for the electrical industry. In normal imports the effect was most pronounced in the cutting down of the imports of coarse yarns and in the stimulation of imports of fine yarns. Imports of hosiery yarns, embroidery yarns, polished yarns, and yarns for silk mixtures declined sharply. The number of different counts and plies imported in 1918 was much smaller than in 1914.

Imported yarns usually come in burlap-covered bales containing 40 or more 10-pound, paper-covered bundles of cross-reeled skeins. A small amount is imported in special skeins, particularly the diamond or Grant reel which is preferred for fine counts. Hosiery yarns are usually on cones. Embroidery yarns are usually on small schiffli bobbins or on schiffli tubes. Polished yarns are wound on wooden or papier-mâché spools. Some yarns for mercerizing come in warp *form,* usually 378 ends, 6,000 yards, wound on wooden rollers or *beams.*

The middleman occupies a more important position at the importing than at the exporting end of the cotton yarn import trade. Approximately three-fourths of the cotton yarn exported to the United States is shipped direct by the spinners and doublers, and only about a fourth through British yarn agents or merchants. On this end the yarn agents and merchants handle some 50 to 60 per cent of the imports and the manufacturers 40 to 50 per cent. Over a third of the import trade is entirely direct, without any intermediaries between the British spinners or doublers and the American lace-curtain or other yarn-consuming manufacturers.

There are many factors affecting the importation of cotton yarns. Imports are such a minute proportion of the domestic production or even of the domestic sales that the tariff is only a minor factor in the trade as a whole, however much it may at times affect certain sections of the trade. If imports are studied in connection with cotton prices it will immediately be noted that under the specific tariffs there was always a marked increase in imports coincident with any marked rise in the price of the raw material. This is natural, but with so many cross currents it is possible that a rise in any particular year may have been due more largely to some other cause.

Imports and exports of cotton yarns are mutually exclusive. Exports, which have greatly expanded since 1914, are mainly of coarse and medium counts under 40s, whereas imports are mainly of fine counts above 40s. In the fiscal year 1919 imports amounted to only 2,827,886 pounds, valued at $5,099,964, whereas exports had risen to 19,217,500 pounds, valued at $13,887,287. Imports averaged $1.80 a pound and exports only 72.2 cents a pound, which is indicative of the much finer range of counts imported.

CONCLUSIONS AND RECOMMENDATIONS.

TARIFF PHRASEOLOGY.

The phraseology employed in paragraphs 250 and 251 of the tariff act of 1913 should be revised and a length delimitation should be inserted in the last named.

Paragraphs 250 and 251 provide for cotton yarn and thread of every description. Paragraph 250 was apparently intended to cover all cotton yarns used for machine work, and paragraph 251 to cover cotton sewing thread and the special yarns used for handwork. The yarns under paragraph 250 are subjected to progressive rates of duty based on the yarn count. Cotton sewing thread, and "cottons" for handwork, which are united under paragraph 251, are totally diverse articles and their being bracketed together and given a flat rate of duty is, to some extent at least, due to the fact that both are numbered or lettered arbitrarily, with no reference to the true yarn count.

There are two decisions of importance involving the intent of Congress concerning the articles enumerated in paragraphs 250 and 251. In the first (7 Court of Customs Appeals, 414) ordinary yarns for machine embroidery were held entitled to the flat rate given the special yarns or cottons for hand embroidery; and in the second (G. A. 8200, T. D. 37793) yarns for making into sewing thread were held entitled to the flat rate given sewing thread. The result of these two decisions has been to remove two groups of ordinary yarns from the progressive rates of paragraph 250. Yarns for machine embroidery and yarns for thread making differ in no essential particular from yarns for other machine work, such as weaving, knitting, braiding, or lace making, and the tariff wording should be clarified to avoid discriminatory classification. of the same yarn according to the intended use. On the other hand, it may be noted that knitting cotton is similar to crochet, darning, and embroidery cottons (the four terms being often used interchangeably), and that it should logically be included with them under paragraph 251.

The only clear differentiation between the two paragraphs would be one based on length, as yarns for handwork, and also most sewing threads, are preferred in shorter lengths than are economically feasible for machine work. A practical point of delimitation would be 840 yards, which is the length of a hank.

The following phraseology is suggested:

Par. 250.—Cotton, yarn, including warps, in any form.

Par. 251.—Cotton sewing thread; crochet, darning, embroidery, and knitting cottons, put up for handwork; all the foregoing in lengths not exceeding 840 yards.

The term "cotton thread" as now used in paragraph 250 is misleading as that paragraph relates solely to cotton yarn, whereas "thread" in common parlance means sewing thread. "Warp yarn" after "yarn" is tautology and may be omitted. "Including warps" may be used because of the fact that yarn in the form of warps might, especially if sized, be construed as further advanced in manufacture than ordinary yarn. The qualifying phrase "in any form" is sufficient to show that it is the intention to include all cotton yarns, unless more specifically mentioned elsewhere as in the case of the special yarns for handwork included in paragraph 251. The term "roping" is the archaic of roving and may be omitted from paragraph 250; as may also the term "flocks" because this is one of the least important of the various types of cotton-mill waste.

Manufacturers and importers are agreed that "cotton sewing thread" is the term that should be used to-day in place of the former "spool thread of cotton," as the use of the latter to include sewing thread not on spools and never intended to be put on spools is rather *anomalous.*

DIFFERENTIALS.

The tariff acts of 1894 to 1913 have levied duties on cotton yarn according to the same two underlying principles: First, that yarns should be divided into two groups, one being given the basic or minimum rates, and the other subjected to advanced rates, and second, that in each group the duties should be progressive according to increases in the fineness of the count.

Under the tariff acts of 1894 and 1897, the basic classification included gray carded single yarns, not grouped; under the act of 1909, gray carded single yarns, not grouped, not mercerized; under the act of 1913, gray carded yarns, single or ply, not mercerized.

Imports under the act of 1894 were almost equally divided between basic and advanced classifications but under the acts of 1897 and 1909 in no year did the imports under the basic classification amount to as much as 5 per cent of the total. Under the act of 1913 about a third enters under the basic rates and about two-thirds under the advanced rates.

If the system of basic and advanced rates be continued in future tariffs the division should be made so that a substantial proportion is included under each for it is misleading to have basic rates that apply to less than 5 per cent of the total. In adjusting the tariff duties the most careful attention should be given to the basic rates, as the advanced rates are built up on these by the addition of a differential.

In applying differentials it is recommended that full effect be given to each and every differential; in other words, differentials should be cumulative.

It is suggested that the present system of differentials be somewhat changed to the extent that ply yarns be made dutiable at a higher rate than single yarns, and that the differential on mercerization be omitted. The manufacture of ply yarns involves two additional machine processes over that of single yarns and, if cost differences are taken into consideration, calls for a higher rate than that on single yarns. On the other hand, it appears that cotton yarn can be mercerized as cheaply in this country as abroad so that there is no apparent object in having a higher rate on mercerized than on plain yarn.

The United States is the only country that has a differential on combed as compared with carded yarn, and the customs authorities at New York report that this provision of law is very unsatisfactory. It is impossible by any physical test to prove that a yarn has been subjected to combing and the same yarn might enter at one port as carded yarn and at another as combed yarn according to the judgment of individual examiners. Between a well-carded, especially a double-carded yarn, and a poorly-combed yarn there is often no difference apparent even to the expert and it is likewise impossible to tell by the count as carded yarns are imported in counts as fine as 140s two-ply.

Theoretically, cabled yarns should carry a higher rate of duty than ply yarn as they are subjected to an additional process of manufacture. The only imports under this head, however, are small amounts of harness twine and these are mainly for use on silk looms and unobtainable here in the count and quality needed. From either a protective or a revenue point of view a differential on cabling hardly seems advisable.

Grouping is more in the nature of a putting-up process rather than actual manufacture, and as group winding is usually less costly than single-thread winding there is no more reason for a differential on grouping than there is for one on reeling or any of the various other methods of putting up yarn for the market.

Gassing, preparing, and polishing are finishing processes that in themselves or in conjunction with certain qualities of material and manufacture account for much of the import trade in cotton yarn. Gassing is the most important, over a third of the imports being subjected to this finish, and it is carried on more cheaply abroad than in this country. A differential on gassed as compared with plain yarn would bear hardest on the lace industry, particularly as fine gassed yarns of the desired quality can not be obtained here and must bought from England. It is probably for similar reasons that foreign countries rarely consider this process a fit subject for extra duties. Prepared or flattened yarn is required in the lace and lace-curtain industries and a differential on preparing would only increase the cost to the consumers as this process is not used in the United States. Much ply yarn and thread is polished here but the small amounts of polished yarns imported are noncompetitive as they are single yarns that have been given a highly lustrous finish by a process that not only importers but manufacturers state is not economically feasible in this country. A differential on either preparing or polishing would apparently have no industrial effect.

Dyeing and bleaching are subjected to a differential in most foreign tariffs, but no testimony has been received to show that the cost of either process is higher in this country. Neither bleached, dyed, nor colored yarns are imported to any extent in normal times, and the fact that any are so imported seems to be independent of any difference in cost of the process itself; for instance, the majority of the dyed yarns were imported because the Turkey-red and blue-black colors needed could not be obtained in this country.

SPECIFIC OR AD VALOREM DUTIES.

Whether levied primarily for revenue or for protection, the cotton-yarn duties of foreign countries are, with few exceptions, on a specific basis.

American manufacturers and importers are apparently unanimous in their desire for specific rather than ad valorem rates of duty. The manufacturers prefer specific rates as avoiding the possibility of undervaluations. The importers prefer specific rates as enabling them to take orders c. i. f., duty paid, and to be able to calculate in advance the margin of profit, which they can not do with the amount of duty fluctuating according to changes in market price.

ADJUSTMENT OF PROGRESSIVE RATES OF DUTY.

It is almost universally agreed that the yarn count is the logical standard on which to base the adjustment of tariff duties on cotton yarn. In adjusting the rates of duty to follow increases in fineness of count there may be used either group progression or individual-count progression. In any system of group progression there are necessarily inequalities at the points where the rate rises between two adjacent counts. Individual-count progression, though involving more careful ascertainment of the exact count, is the most equitable system.

A study of the principles underlying the adjustment of tariff duties based on differences in costs of production of ring yarns in the United States and of mule yarns in England indicates, as shown in Chapter VI, the advisability of having one rate of progression of duties, preferably as a fraction of a cent per number per pound, on counts up to and including 40s (this marks the usual limit to the employment of short-staple upland cotton), and another and somewhat steeper rate of progression of duties on counts from 41s up to 120s. The domestic production of the extreme fine counts above 120s is limited and mainly consumed in the mills where spun; the imports of such counts, especially if processed by "preparing" or otherwise, are practically noncompetitive. On counts above 120s duties should preferably be stationary or discontinued, for the reason that these yarns, largely noncompetitive, are necessary for the development of the domestic lace and other industries.

REVIEW OF TARIFF LEGISLATION ON COTTON YARN AND THREAD.

Cotton yarn and thread were not mentioned in the earliest tariff acts but paid duty, ranging from 5 per cent ad valorem in 1789 to 25 per cent ad valorem in 1812, under general provisions.

The first specific mention was in the act of 1816, when "cotton twist, yarn, or thread" were made dutiable at 25 per cent ad valorem, with a proviso that the rate be reduced to 20 per cent ad valorem after three years.

In 1824 a color distinction and differential was introduced by the proviso that unbleached and uncolored yarns valued at less than 60 cents a pound should be deemed valued at 60 cents and that bleached or colored yarns valued at less than 75 cents should be deemed valued at 75 cents a pound. This color provision with its minimum valuations was continued in the acts up to and including 1842. In the latter act a provision for "all other cotton twist, yarn, and thread, on spools or otherwise" was introduced to make the rate on the higher-priced yarns 30 per cent ad valorem as against 25 per cent ad valorem on those valued, as above, at not over 60 and 75 cents a pound, respectively. Incidentally, the reference to spools was the first mention of holders.

In the following tariffs of 1846 and 1857 there was no specific mention of cotton yarn or thread. They were dutiable under the provision for cotton manufactures not otherwise provided for, this being 25 per cent ad valorem in 1846 and 19 per cent ad valorem in 1857.

In 1861 cotton yarn and thread of all descriptions were included under the wording of "spool and other thread of cotton." The duty was 30 per cent ad valorem. In 1862 it was increased to 40 per cent ad valorem.

Up to this time the tariff laws had included cotton yarn and thread under one rate, but the growing development of the sewing-thread industry caused its needs to be recognized separately and since 1862 there has been a more or less clear demarcation attempted between cotton sewing thread and cotton yarn.

Cotton yarn.—The rate of 40 per cent ad valorem in the act of 1862 on "other thread of cotton" continued to apply on single yarn until 1870, but on ply yarn it was changed in 1865 to a compound rate of 4 cents per skein or hank of 840 yards, and 30 per cent ad valorem. Up to this time the duties on cotton yarn had been uniformly ad valorem.

In the acts of 1870, 1872, and 1875, there was employed a system of group values, yarns being divided into those valued at not over 40 cents, from 40 to 60 cents, from 60 to 80 cents, and those over 80 cents a pound, respectively. Compound duties were used, of which the specific portion was progressive.

In 1883 the value basis was retained but instead of four there were eight groups: not over 25 cents, 25 to 40 cents, 40 to 50 cents, 50 to 60 cents, 60 to 70 cents, 70 to 80 cents, 80 cents to $1, and over $1 per pound, respectively. On the first seven groups the progressive rates were specific in cents per pound; on the last group, yarn valued at over $1 a pound, there was levied an ad valorem duty of 50 per cent. With the exception of a slight readjustment of rates on three groups, the act of 1890 was identical with that of 1883.

In 1894 the system of dividing yarns into classes by values was dropped, and in that and subsequent tariffs, whether specific, compound, or ad valorem, the primary basis has been the yarn count. The system of basic and advanced classifications was also inaugurated at that time.

In the act of 1894 the basic classification of gray single yarns was divided, according to yarn count, into three groups. A flat rate of 3 cents per pound was levied on counts up to No. 15; a progressive rate of one-fifth of 1 cent per number per pound on counts above No. 15, up to and including No. 30; and a progressive rate of one-fourth of 1 cent per number per pound on counts above No. 30. The advanced classification was composed of yarns "colored, bleached, dyed, combed, or advanced beyond the condition of singles by grouping or twisting two or more single yarns together," and was divided into two groups. The first included all counts up to No. 20, these being made dutiable at a flat rate of 6 cents per pound; all above No. 20 were made dutiable at a progressive rate of three-tenths of a cent per number per pound. The tariff of 1894 was unique in fixing maximum instead of minimum ad valorem rates in connection with the specific rates. The former group valuation system was retained in connection with these maximum provisos. By the application of the maximum provisions duties were limited to 8 cents a pound on yarn valued at not over 25 cents a pound, to 15 cents a pound on yarn valued at more than 25 and not more than 40 cents a pound, and to 45 per cent ad valorem on yarn valued at over 40 cents a pound.

The act of 1897 was identical with that of 1894, except that the maximum provisos were discarded, and that under the advanced classification there was made three divisions instead of two, the middle class consisting of counts from 20s to 80s dutiable at one-quarter of a cent per number per pound. The act of 1897 is unique, *so far as* cotton yarn is concerned, in that it was entirely specific.

The act of 1909 reduced the duties on the basic classification of single gray yarn to 2½ cents a pound for counts up to and including No. 15, to one-sixth of a cent per number per pound on counts from No. 15 to No. 30, and to one-fifth of a cent per number per pound on counts above No. 30; however, this was modified by the insertion of a minimum ad valorem catch-all of 15 per cent. The duties on the advanced classification were adjusted so that the 6 cent flat rate applied to counts up to and including No. 24, and the one-quarter cent per number per pound to counts from No. 24 to No. 80, the three-tenths of a cent per number per pound was limited to the counts from No. 80 to No. 200, whereas above No. 200 the duty became 60 cents a pound and one-tenth of a cent per number per pound. A new provision was that for cable-laid yarn with a flat rate of four-tenths of a cent per number per pound on the unbleached, and nine-twentieths of a cent per number per pound on the colored, bleached, or dyed. A minimum ad valorem catch-all of 20 per cent was applied to cable-laid yarns and to yarns under the advanced classification. A new provision also was the insertion of a differential for mercerization; this was placed at one-fortieth of a cent per number per pound and was made cumulative.

In the act of 1913 cotton yarns were divided, according to count, into eight classes: Up to No. 9, above No. 9 to No. 19; above No. 19 to No. 39; above No. 39 to No. 49; above No. 49 to No. 59; above No. 59 to No. 79; above No. 79 to No. 99, and above No. 99. The progressive duties on the basic classification, which was made to include ply as well as single gray yarn, range from 5 per cent ad valorem on yarns in the first group, not above No. 9, up to 25 per cent ad valorem on the last group, yarns finer than No. 99. Between groups there is a uniform rise of 2½ per cent ad valorem, with the exception of a 5 per cent rise between 39s and 40s. The progressive duties on the advanced classification of "combed, bleached, dyed, mercerized, or colored" are uniformly 2½ per cent above those under the basic classification.

Cotton sewing thread.—In the case of "spool thread of cotton" there was a change in 1864 from the ad valorem duties, which had theretofore been uniformly imposed, at not more than 40 per cent, to compound duties. The rates then levied were 6 cents per dozen spools for each 100 yards or fraction thereof, together with 30 per cent ad valorem. In 1865 the rate was 6 cents per dozen spools for each 100 yards or fraction thereof, together with 30 per cent in the case of spools of not over 100 yards and 35 per cent in the case of spools containing over 100 yards. The 1865 rates were renewed in the act of 1870, were reduced 10 per cent in 1872, and restored to the former level in 1875.

In 1883 the compound duties were changed to straight specific and 7 cents per dozen spools for each 100 yards or fraction thereof were levied in the acts of that year and of 1890. In 1894 the rate was reduced to 5½ cents.

In 1897 crochet, darning, and embroidery cottons were added to spool thread of cotton, and the rate made 6 cents per dozen spools or reels of 100 yards or fraction thereof. The clause as passed by the House of Representatives was for "cotton thread on spools or reels." This was changed in the Senate to read "spool thread of cotton, including crochet, darning, and embroidery cottons, on spools or reels." Duties were forbidden to be assessed upon a less number of yards than was marked on the spools or reels. There was a further provision in the same paragraph (303) for such thread not on spools or reels, the duty on which was made one-half of 1 cent for each 100 yards or fractional part thereof.

The 6-cent and the half-cent rates were carried into the act of 1909 (par. 314) with a proviso that the duties should in no case be less than 20 per cent ad valorem. Crochet, darning, and embroidery cottons were continued with spool thread of cotton. The provision "if in skeins, cones, or tubes, containing less than 600 yards each" was substituted for the 1897 provision "if otherwise than on spools or reels," in the clause containing the one-half cent rate.

In the act of 1913 an ad valorem rate of 15 per cent flat, with no minimum as to yardage, was substituted for the specific rates on "spool thread of cotton, crochet, darning, and embroidery cottons."

DEFINITIONS AND DESCRIPTIONS

CHAPTER I.

DEFINITIONS AND DESCRIPTIONS.

Cotton yarn is spun from cotton roving. It is used in the manufacture of woven goods, knit goods, braid, lace, embroidery, and sewing thread.

Cotton yarn may be made from upland, Peeler, Egyptian, sea-island, or other cotton; it may be carded or combed; ring spun or mule spun; made with varying degrees of twist from XXX soft up to extra hard; in the single, doubled, or cabled; gray, bleached, printed, dyed, or colored; plain or finished (gassed, mercerized, prepared, polished); it may be put up in a number of ways, and may be used for many different purposes. There are many varieties of cotton yarn, and several modifying adjectives are required for the precise identification of any particular count. The cheapest yarns are gray carded singles in coarse counts, whereas the costliest are very fine two-ply sea-island lace yarns, combed, bleached, gassed, and prepared.

Cotton yarns are spun commercially from halves up to 400s. The finest ordinarily imported into the United States are 260/2 ply. The normal limit of manufacture in the United States thus far has been 100s warp and 120s filling, although for their own use a few mills are equipped to spin up to 200s if desired. Market quotations are rarely published of counts above 80s. So far as cotton yarns spun for the market are concerned, England supplies the world with those above 100s, and the United States is no exception to the rule.

The number or count of cotton yarn means the number of 840-yard hanks that weigh 1 pound. Thus, No. 1 cotton yarn measures 840 yards to the pound, whereas No. 100 cotton yarn measures 84,000 yards to the pound; the higher the count the finer the yarn. This is the English system that is used in the United States, the United Kingdom, India, Japan, and many other countries. The metric system, whereby the count indicates the number of 1,000 meter hanks that weigh 1 kilogram; the French, or half-metric, system, whereby the count indicates the number of 1,000-meter hanks that weigh 500 grams; the Spanish and other systems are in partial use in various countries, but the English system is the one most nearly universal.

Carding and combing.—In making ordinary cotton yarn, sometimes specified as carded cotton yarn, raw cotton is subjected to five mill processes, these being (1) picking, (2) carding, (3) drawing,

(4) roving, and (5) spinning. In making combed cotton yarns, raw cotton is subjected to six mill processes—picking, carding, combing, drawing, roving, and spinning.

The insertion of the combing process increases the cost of the yarn, not only by reason of the labor and overhead charges on an additional machine process, but particularly because it doubles the waste. Combed yarns are stronger, evener, and cleaner than ordinary carded yarns. Combing is employed in the United States for most yarns above 60s, whereas in England combing usually starts at 80s, although in both countries it may be used on much coarser yarns for special work. Some yarns are double carded, at a cost about intermediate between ordinary carded and ordinary combed yarns. Very fine yarns, especially yarns of 250s and up, are double combed. The percentage of waste made in producing yarn from raw cotton varies with the kind of cotton used and the quality of yarn desired, but will average around 15 per cent for carded yarns, 20 per cent for double-carded or super-carded yarns, 25 per cent for combed yarns, 30 per cent for super-combed yarns, and 40 per cent for double-combed yarns.

There are no such machine processes as supercarding or supercombing, although invoices from England frequently contain the terms "super carded" and "supercombed." These are employed as quality terms to indicate that the yarn is superior to the usual run and may mean that it is made from a better grade of cotton or that the carding or combing has been performed more slowly and carefully than usual. The terms do not necessarily indicate double carding or double combing, although these processes may have been used, and the only meaning that can be applied to the term is that the yarn so marked is of a superior quality. Some firms indicate their best quality by the use of letters or figures, such as "A" or "No. 1," instead of the term "super."

Combing is a comparatively recent development. Cotton yarns were spun to very fine counts by hand before combing machines, or even carding machines, were invented, and with careful carding it is possible to spin to very fine counts to-day without combing. It may be noted that English invoices show some cotton yarns as fine as 140/2 ply listed as carded only.

Spinning.—Cotton yarn may be either ring spun, mule spun, or hand spun. Hand spinning survives only in sections of the world that are industrially undeveloped. Flyer spinning, which still survives in the wool industry, has disappeared from the cotton industry. Domestic yarns are mainly ring spun, whereas imported yarns are mainly mule spun, therefore a brief contrast of the two processes is *worth noting. Mule* spinning is the older of the machine processes and is an intermittent process. A length of roving is drawn out and the mule ceases to produce until this has been twisted and wound up, either on the bare spindle or on a paper tube placed on the spindle. Then the operation is repeated. Ring spinning is a later process that was developed in the United States and is continuous, the roving being drawn out, twisted into yarn and wound on to wooden bobbins simultaneously. Mule spinning is nearer to the original method of hand spinning and puts less strain on the yarn, permitting shorter-fibered cottons to be spun to higher counts and similar cottons to be spun with less twist than is possible with the ring frame; the method of operation also tends to make evener and "loftier" yarns. Mule spinning is preferable, in fact essential, for the two extremes: Coarse cotton-waste counts, which can not stand much strain, and fine counts of superior quality, which have to be made with great care. Mule spindles take less power to operate, and the first cost is usually less than that of ring spindles. Ring spindles have the advantages of taking up much less floor space and of being easier to operate and repair; of requiring less skilled labor; and what is especially important, of turning off a larger production on ordinary numbers at a smaller labor cost.

In the older cotton-manufacturing countries, such as England, France, and Switzerland, mule spinning predominates whereas in the younger cotton-manufacturing countries, such as the United States, Japan, and India, the ring frame is the rule. The competition of the ring frame has been such that a predominance of mule spindles in any country indicates a predominance of fine counts.

In the United Kingdom more than 85 per cent of the total spindles on cotton are mule. In the United States the ring spindle is the standard, and not only constitutes over 87 per cent of the total (census of 1914) but the mule spindles are declining absolutely as well as relatively. The ring frame has been developed to the point where it is used to a small extent for counts as high as 130s. For counts above 100s, however, mule spun yarn is usually preferred, and the tendency in the United States has been to buy from abroad the small proportion of very fine counts required rather than to replace worn out mules.

It is not practicable to make any tariff differentiation between ring spun and mule spun yarns because it would be impossible from examination of the finished yarn to state accurately the system of spinning that had been used.

Single and ply yarns.—Yarn as it comes from the spinning machine is single yarn; if two or more ends are twisted together it is known as ply yarn, twisted yarn, doubled yarn, or folded yarn.

English invoices always specify the ply first and the count second; this system is also used to some extent in the northern mills. In the United States it has, however, become more customary to place the count first, and from the evidence of English textbooks and trade papers it would seem that this system is beginning to be used somewhat in England. In this report there is used the system that predominates in the United States, thus 60/1, reading "sixties single", is used to denote one strand of 60s yarn, whereas 60/2, reading "sixties two-ply", is used to designate yarn composed of two ends of 60s twisted or doubled together.

Three different types of machines can be utilized in twisting (doubling). The ring twister is used in the United States, and it is also the one most generally used in the United Kingdom and other countries. The United Kingdom also uses the twiner (an adaptation of the mule) and the flyer twister. The flyer twister puts less strain on the yarn and gives a more perfect yarn than any other process. It is used to a small extent in the United States for very coarse soft work, such as the manufacture of mop yarns, but there are no flyer twisters in the United States of the type used for making fine ply yarns. A very large proportion of the fine ply yarns imported from England is made on the flyer twister, and the more perfect product obtained is one of the basic reasons for the importation of such yarns.

"Grouped" yarns are those that are wound together side by side on to cones for use in electrical winding or other further manufacture. As a rule they are single yarns, though ply yarns can also be grouped if required. The process of "grouping" or "multiple winding" does not change single yarn to ply yarn as the yarns are not twisted together and each strand can be readily separated from its neighbors. There is no reason for differentiating "grouped" single yarns from other single yarns.

The term "cabled" is used in a general sense to designate yarn or thread composed of two or more ends of ply yarn twisted together. Sometimes a distinction is made between "cable twist" and "hawser twist". Cable twist, as thus distinguished, means that the first twist is opposite to the twist with which the yarn is spun, and that the second twist is the reverse of the preceding. The only imported cabled yarn noticed in this investigation consisted of harness twine made in 6, 9, and 12 ply. Hawser twist means that the first twisting or doubling is in the same direction as that in which the yarn was spun, in other words, "twist on twist," whereas the second doubling is in the opposite direction. The yarn for hawser twist is spun softer and with less twist so that it permits of twisting again *in the same direction* without kinking. Six-cord sewing thread is made "hawser twist" though ordinarily it is referred to under the broader use of the term "cable twist".

The word "twist", unfortunately, has two meanings which are sometimes confused. A yarn may be spun with a certain "twist," by which is meant a certain number of turns twist per inch. Two or more yarns doubled together are also spoken of as "twisted yarns." The English further use the term "twist" to indicate the warp in contradistinction to the softer spun weft or filling. Yarns are also spoken of as "right twist" or "left twist"; these terms are used with opposite meanings by different manufacturing centers, but as a rule, in the cotton industry "right or regular twist" means that the twist in the single yarn slopes up to the right like the threads in a right-handed screw. This is sometimes defined as clockwise. In the case of ply yarns "regular twist" means the opposite to that for single yarns; that is, it is anticlockwise. "Reverse twist" in ply yarns is therefore clockwise, or similar to "regular twist" for single yarns.

Color.—Yarn in its natural cotton color is unbleached yarn, and is usually called gray yarn. Unbleached yarn from the Egyptian Mitafifi is sometimes known as brown yarn because of the distinctive shade of the original cotton. In order to distinguish Mitafifi yarn from the Egyptian Abassi, which is without the brown shade often associated with Egyptian cotton, the Abassi yarn is sometimes known and invoiced as white cotton yarn, although it is unbleached.

Besides gray yarns (special varieties being listed as brown or white) yarns may be sold in the bleached, dyed, or colored states. The term "colored" may include dyed yarns but is usually employed to indicate yarn that is only partially dyed, such as printed yarn or yarn made of one dyed and one undyed strand.

Finish.—Cotton yarns may be finished by gassing, mercerizing, preparing, polishing, or other processing. These methods are referred to more fully in Chapter IV, though it may be here stated that the finish is one of the main reasons for the importation of foreign cotton yarns.

Method of putting up yarns for shipment.—Yarns are put up for shipment in various forms. The cost of putting up is usually small, as compared with the cost of actual manufacture, but is in many cases large enough to appreciably affect comparisons. In England, for instance, a mule spinning mill in supplying a separate weaving mill, usually ships on the cop as spun, without any expense for putting up, and gray single yarns may also be exported on the cop with no further charge except that of casing. Most American yarn mills, using the ring frame and spinning on wooden bobbins, reel or wind the yarn off the bobbin before shipment. Costs or selling prices of yarns on the cop should therefore not be compared with those of yarns in skeins or cones without some allowance for the putting-up costs involved in the latter instances.

The majority of the yarns sold in international or in domestic trade are put up in skeins. A skein consists of a continuous length of yarn reeled into circular form. The usual cotton skein is made on a reel having a swift of 54 inches circumference. The greater part of the international trade in cotton yarns consists of skeins that are put up in paper-covered bundles, usually of 10 or 5 pounds each, and then 40 or 80 of these packed in burlap-covered bales weighing 400 pounds each. Very fine yarns are put up in 2-pound packets. Domestic skein yarns are shipped in bales without any preliminary bundling.

A cop is a cylindrical coil of yarn with tapering ends and is produced on the mule; it may or may not have a pasteboard core. Warp cops are larger than the pin cops that are to be used in the shuttle. "Through cops" have an opening from end to end whereas others have an opening only half way through. Cops are usually shipped in cases, though sometimes in bales.

Yarns are also put up on cone winders, in various shapes and sizes of cones or tubes. Hoisery yarns are usually shipped in the cone and electrical yarns are imported largely in cones. Tubes have parallel sides and are of different sizes and wound in different styles. "Schiffli tubes," for embroidering, are small with a pasteboard core. The yarns used on the back of the cloth in making embroidery are put up on "4/4 schiffli bobbins," which are minute tubes, 1 French inch long, wound on the bare spindle.

A warp, or warp chain, is a number of ends of equal length, placed together for use in forming the lengthwise series of yarns in weaving. For shipment warps may be put up in round or cylindrical balled chains, in looped or linked chains, or on beams or wooden rollers.

Polished yarns usually come tightly wound on spools. The spools from England are of wood whereas those formerly from Germany were papier-mâché.

Raw materials.—The main cotton producing countries are the United States, India, China, Egypt, Russia, and Brazil. The United States regularly produces over 60 per cent of the total.

The cotton produced in the United States may be divided into four classes, according to length of staple, as follows: Short-staple uplands, long-staple uplands, American-Egyptian, and sea-island. Short-staple uplands, usually known as uplands, though divisible into Texas, uplands (from the Atlantic slopes), and Gulf cottons, include only cottons not exceeding $1\frac{1}{16}$ inches in length, and these can not be used for counts much above 40s. Probably seven-eighths of the cotton yarns produced, however, are coarse and medium counts, so that uplands is the most useful cotton grown, and it predominates in English as well as American mills. Long-staple uplands, often distinguished as American "staple" cottons, are mainly 1⅛ to 1⅜ inches in length, a small amount running up to 1⅝ inches; whereas American-Egyptian cotton, a new development of much promise, now averages around 1⅝ inches. Sea-island is the finest, silkiest, and longest cotton grown; it varies in length of staple but a small amount runs up to 2½ inches. It is essential for counts above about 180s, and the best qualities are usually contracted for ahead by British and French fine spinners; the greater part of the small crop is, however, used in the United States.

Egypt is the leading producer of long-staple cotton, though its normal crop is equivalent to only about one and one-half million bales of 500 pounds each. England normally uses almost half of the Egyptian crop, the remainder being divided among the United States, France, Germany, Russia, Austria, and Japan. There are various types of cotton included under the general term "Egyptian"; formerly the brown Mitafifi type predominated, but to-day the longer and whiter Sakelaridis, a recent development, makes up over half of the crop. The Joanovich and Abassi types, once well known, have almost disappeared.

The British Board of Trade estimates that of 148,000,000 cotton spindles in the world in 1914, there were 32,000,000 working on Egyptian cotton, and that of these fifteen and one-half million were British. Although the United Kingdom uses about 80 per cent of American cottons as against 15 per cent Egyptian, the latter amount engages the services of a fourth to a third of the total spindles. Egyptian cotton is the most useful of the long-staple cottons and is employed for a wide range of counts. The fact that the British use such a large proportion of the Egyptian cottons, and that Great Britain is the only country that spins fine yarns in bulk largely accounts for its yarn shipments to highly developed manufacturing countries like the United States and Germany. Fine long-stapled cottons are not, however, used exclusively for fine counts. A large amount is spun into coarse counts for use as embroidery, for weaving tire fabrics, and for other special purposes. The Egyptian raw cotton imported into the United States, for instance, is mainly used for tire fabrics, and probably not 10 per cent of it is spun to counts above 40s. These special uses cut down the amount of staple cottons available for fine counts, and as the demand for the fine counts has been steadily increasing the supply is not keeping pace with the demand.

The countries having the largest mill consumption of cotton in normal times are the United States, the United Kingdom, Germany, India, Russia, and Japan. In 1918 the only large spinners were the

United States, the United Kingdom, India, and Japan. The United Kingdom, though it has approximately 38 per cent of the world's cotton spindles, as compared with 23 per cent in the United States and 39 per cent in all other countries, spins so much higher counts, on the average, that it uses considerably less than half as much cotton as does the United States. The cotton-growing States in 1918 spun more pounds of cotton than did the New England States, and the latter spun slightly more than did England.[1]

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[1] It is not deemed necessary in this report to include any detailed description of the American cotton industry. Such facts as are pertinent to this study of the import and export trade in cotton yarn are cited in their relevant connection. For a full description of the development of the American cotton industry up to the outbreak of the war, and detailed data as to its location, operations, and products, the "Cotton manufactures" section of the 1914 Census contains the latest official information. The annual Census Bulletins on "Cotton production and distribution" contain yet later information as to amount of machinery used and cotton consumed.

IMPORTS OF COTTON YARN AS SHOWN BY PUBLISHED STATISTICS

CHAPTER II.

IMPORTS OF COTTON YARN AS SHOWN BY PUBLISHED STATISTICS.

GENERAL IMPORTS, BY COUNTRIES, 1891–1918.

The United Kingdom has always supplied by far the greater part of such foreign-spun cotton yarns as were required by the American trade. It has more spindles than any other country and excels particularly in the spinning, doubling, and finishing of fine yarns and of yarns for special work. German shipments of cotton yarn, although much smaller than those from the United Kingdom, have at times exceeded a million pounds a year. Switzerland and France have supplied smaller amounts, but imports from countries other than the four mentioned have been negligible.

In the 28 years from 1891 to 1918, inclusive, imports of cotton yarn totaled 138,832,117 pounds, of which the United Kingdom supplied 85.09 per cent, Germany 10.88 per cent, Switzerland 2.59 per cent, France 0.99 per cent, and all other countries 0.45 per cent. The total value of these imports amounted to $79,321,046, of which amount 88.44 per cent was paid to the United Kingdom, 8.04 per cent to Germany, 2.19 per cent to Switzerland, 0.92 per cent to France, and 0.41 per cent to all other countries. It is seen, from the percentages quoted above, that the yarns from the United Kingdom not only predominate in quantity but also rank highest in average value per pound.

Tables 1 and 1a are inserted at the outset to afford a chronological summary of the history of the import trade in cotton yarns. These tables relate to the general, or total landed, imports of cotton yarns for the 28 fiscal years ending June 30, 1918, and they enable one to follow the trend of the imports by countries as well as by total quantities and values. They show that imports of cotton yarns into the United States, though fluctuating, tended to increase during the period from 1891 to 1910, and in the latter year reached their prewar maximum.

TABLE 1.—*General imports of cotton yarn (in pounds).*

Fiscal year.	United Kingdom.	Germany.	Switzerland.	France.	Belgium.	Canada.	Japan.	Others.	Total.
1891	1,538,713	109,265	1,643	26,366	9,711	337	4	....	1,686,039
1892	1,283,003	100,323	1,892	36,570	4,726	36	5	30	1,426,585
1893	1,514,090	90,750	2,819	120,012	4,660	60	....	2,027	1,734,418
1894	644,837	64,440	443	19,008	16,915	800	....	595	747,038
1895	1,694,383	69,475	1,550	15,033	4,099	173	....	142	1,784,855
1896	2,357,889	52,001	1,349	19,778	505	15	....	318	2,431,855
1897	1,526,887	113,975	1,408	18,223	3,629	....	....	95	1,664,217
1898	1,642,476	159,811	5,414	9,799	295	62	....	113	1,817,970
1899	1,974,456	328,398	8,940	13,991	171	....	....	18	2,325,974
1900	4,569,581	550,069	45,915	103,269	2,320	....	400	937	5,272,491
1901	2,883,354	715,583	66,866	55,619	1,746	....	581	1,507	3,725,256
1902	3,970,163	760,644	154,760	102,797	15,382	112	611	1,721	5,006,190
1903	4,515,939	1,049,042	155,347	38,369	4,516	....	480	1,244	5,764,937
1904	3,814,890	1,145,604	75,376	8,085	14,699	121	670	1,088	5,060,533
1905	3,924,394	1,036,601	46,011	5,050	10,597	5	213	2,460	5,025,331
1906	3,867,400	1,002,616	131,453	88,059	18,785	338	365	2,628	5,111,644
1907	5,740,804	889,988	128,898	77,597	6,902	57,768	110	38,194	6,940,261
1908	5,821,486	829,660	241,513	100,225	11,308	9,594	297	22,359	7,036,442
1909	5,617,301	916,482	285,854	86,720	13,262	1,536	531	4,609	6,926,295
1910	7,155,379	1,006,918	447,519	265,978	3,454	36	199	433	8,879,916
1911	5,809,888	819,890	384,454	36,755	11,105	57,846	1,079	123	7,121,140
1912	5,486,919	890,682	416,880	17,456	14,160	232	322	395	6,827,046
1913	6,179,581	1,169,879	327,930	41,477	6,766	800	581	1,635	7,728,649
1914	5,070,288	847,586	438,436	40,831	1,386	5,056	223	13,999	6,417,805
1915	5,157,484	376,799	217,058	20,617	1,183	4,928	4,114	25,557	5,807,740
1916	8,062,403	17,952	12,416	1,148	....	8,413	....	3,411	8,105,743
1917	10,348,725	12	2,089	56	....	4,378	10,367	75,489	10,441,116
1918	5,949,051	....	1,000	2,882	....	1,085	300	60,313	6,014,631
Annual average	4,218,634	539,802	128,758	48,992	6,510	5,490	766	9,337	4,958,289

TABLE 1a.—*General imports of cotton yarn.*

[Invoice values.]

Fiscal year.	United Kindgom.	Germany.	Switzerland.	France.	Belgium.	Canada.	Japan.	Others.	Total.
1891	$761,476	$66,881	$1,420	$22,604	$5,040	$223	$1	....	$857,645
1892	575,586	61,594	1,963	23,326	2,431	42	3	$7	664,952
1893	668,214	51,528	1,421	37,739	2,330	12	....	1,409	762,653
1894	261,474	38,557	548	15,883	9,344	180	....	238	326,224
1895	602,623	36,473	930	16,468	2,108	35	....	65	658,702
1896	826,167	27,608	801	17,152	241	4	....	94	872,067
1897	574,173	55,871	1,070	14,667	1,579	....	....	28	647,388
1898	622,218	53,629	3,087	8,917	107	12	....	29	687,999
1899	728,143	105,497	4,730	11,359	80	....	....	10	849,819
1900	1,837,696	199,805	18,351	42,020	753	....	53	280	2,098,958
1901	1,439,344	259,862	23,050	23,244	528	....	61	634	1,746,723
1902	1,562,397	265,795	46,968	42,078	4,053	7	99	351	1,921,748
1903	2,004,715	354,121	40,119	20,866	1,334	....	115	459	2,421,729
1904	1,797,382	419,016	31,372	5,915	7,414	25	169	631	2,261,924
1905	1,797,300	375,499	22,455	3,799	4,161	2	54	884	2,204,154
1906	1,846,319	555,783	46,678	119,133	26,728	586	94	3,403	2,598,724
1907	3,003,002	434,500	57,266	36,000	2,426	35,201	27	15,205	3,583,627
1908	3,323,865	426,965	101,138	45,699	5,466	5,221	72	12,685	3,921,111
1909	2,746,870	383,421	127,841	35,998	5,097	752	111	6,082	3,306,172
1910	3,602,622	415,058	199,828	98,625	1,388	13	49	205	4,317,788
1911	3,572,804	367,526	230,002	19,173	5,081	23,388	180	60	4,218,214
1912	3,414,901	359,646	233,324	12,692	6,780	236	86	462	4,028,127
1913	3,754,209	488,961	184,173	17,924	2,647	656	214	470	4,449,254
1914	3,239,888	391,301	222,104	18,360	519	1,419	80	3,554	3,877,225
1915	3,012,916	173,682	123,801	10,207	439	948	416	4,601	3,327,010
1916	5,056,186	8,753	13,014	955	....	4,459	1	1,619	5,084,987
1917	9,754,683	9	3,204	60	....	2,477	7,540	41,520	9,809,493
1918	7,757,885	....	1,610	2,877	....	1,347	46	52,864	7,816,629
Annual average	2,505,181	227,762	62,224	25,848	3,503	2,759	338	5,280	2,832,895

No attempt is here made to analyze the many cross currents that tended to cause increases or decreases in the yarn imports in various years. Attention may be called to the fact, however, that the sudden increase in imports in 1910, with average price per pound and equivalent ad valorem rate of duty almost precisely the same as for the preceding year, can be ascribed largely to one cause. The tariff act that went into effect August 5, 1909, permitted lace and embroidery machines to come in free of duty if imported prior to January 1, 1911. There was an immediate rush to take advantage of this provision, and within the time stated the lace and embroidery industries of the United States doubled in productive capacity. Each new machine meant larger purchases of suitable foreign yarns on which to operate, and these purchases swelled the total to a new record. The tendency after 1910, with American spinning steadily substituting for the foreign, was apparently downward, until in 1916 and 1917 war prosperity, and war needs caused larger purchases abroad, and in the latter year imports attained a record exceeding that of 1910. A portion, at least, of the record imports in 1917 was due to anticipation of higher prices and of possible embargoes or other interruptions to the supply of fine or special yarns which could not be easily replaced in this country. Some lace and lace curtain mills, which were accustomed to keeping a two months' yarn supply on hand, forced delivery on their contracts with English spinners and doublers, greatly in excess of the normal, some of them succeeding in laying up a two years' supply. Importers of some other lines, particularly of fine electrical yarns, also bought greatly in excess of the current demand.

In 1918 imports fell off sharply. This decline was due to several causes, among which may be mentioned particularly the effect of excess imports in certain lines during the previous year, the British embargo of January 5, 1917, on the export of yarns made of sea-island cotton, and the closer regulation by the British Government of the production and distribution of cotton yarns. The main cause of the decline, however, was that British yarn prices became so much higher than the American that imports were more strictly limited to those for which substitutes could not be obtained in the domestic market. Normally, prices of raw cotton on the New York and the Liverpool markets are very close together, but during the war there was a tendency to draw apart, and just about the beginning of the fiscal year 1918 the decreasing stock of cotton in England and the difficulty of renewal caused the Liverpool prices to rise much more sharply than the New York prices. This difference widened during the year and by January, 1918, became so abnormal that English yarn quotations were advanced to a point where yarn imports, except some previously contracted for, were confined to specialties such as brass-bobbin yarns which, owing to the lack of domestic supplies, had to be imported irrespective of price to keep the lace and lace curtain mills going. The abnormal prices of English yarns, as compared with American, continued beyond the fiscal year 1918, and judged by the continued decline of imports in succeeding months for which statistics have been compiled the total imports of cotton yarn in the fiscal year 1919 will be less than 3,000,000 pounds.[1]

As shown in Table 1 the import of cotton yarns from the Continent during the first year of the war, the fiscal year 1915, was less than half that of 1914, and thereafter dropped to negligible proportions. German shipments were cut off by March of 1915; on April 23, 1915, Germany officially prohibited the export of cotton yarns. France prohibited the export of cotton yarn and thread by decree of August 20, 1915, and this decree was followed on October 19, 1915, by a similar order of the Swiss Federal Council. The United Kingdom, which has always been the main source, became practically the only source of yarn supplies.

Of the "all other" shipments it may be noted that—in the years in which they were large enough to be noticed at all—the chief sources of supply were Italy in 1907, 1908, and 1914; Austria-Hungary in 1915, and Holland in 1917 and 1918.

The annual declared export returns sent in by American consuls, and usually published in condensed form by the Bureau of Foreign and Domestic Commerce, show that Manchester is the main center for the export of cotton yarns to the United States, in fact, supplies over half of our total foreign purchases, and that Nottingham ranks second. They also show that shipments of cotton yarn were regularly recorded by the American consuls at Bradford, Barmen, St. Gall, Liverpool, and Glasgow, and small shipments at a few other points such as Plauen and Lyons.[2]

IMPORTS FOR CONSUMPTION.

IMPORTS BY YEARS, 1891–1918, WITH RATES OF DUTY AND REVENUE.

Merchandise landed in the United States may be immediately entered for consumption, and possession taken by the importer, after the payment of duty, or it may be stored in bonded warehouses. In the latter case the duty is not paid nor are the goods recorded as entered for consumption until such time as they may be withdrawn from the warehouse. Transit trade is not included in ordinary import and export records. Statistics of general imports record all merchandise other than that in transit, arriving in the United States, whether duty is paid at time of arrival or deferred, whereas statistics of imports for consumption record only merchandise actually taken possession of by the importer. The merchandise recorded in the statistics of imports for consumption may have arrived during the year, or a portion may have arrived in a previous year and have just been withdrawn from warehouse.

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[1] Later statistics, received as we go to press, show that imports of cotton yarn in the fiscal year ending *June 30, 1919,* were only 2,827,886 pounds, valued at $5,099,964.

[2] *A complete list of the points of origin* in 1914 and 1918 is to be found in Chapter IV.

For the reasons stated above the pounds of yarn shown in Table 2 herewith as entered for consumption in the years from 1891 to 1918 do not coincide with the pounds of yarn shown in Table 1 as general imports during the same years. The difference between the two in any year is, or should be, the measure of the variation in level of the stock of cotton yarn in bonded warehouses.

In some years less yarn is put into than withdrawn from bonded warehouses, thus causing general imports to be less than imports for consumption. This was the case in 1917, for instance, when general imports amounted to 10,441,116 pounds and imports for consumption to 10,564,304 pounds. An excess of imports for consumption indicates a strong demand. Stocks in bonded warehouses fluctuate from month to month, particularly during tariff transition periods. Considering the bonded warehouse stocks at New York, the main port of entry, it may be noted that on December 1, 1912, there were 242,777 pounds of cotton yarn so stored. This amount was steadily increased month by month until October 1, 1913, when it stood at 700,859 pounds. The duty was lowered and stocks ebbed down to normal again, being shown as 235,629 pounds on July 1, 1914. Stocks were normal then for about a year and a half when they dropped to a lower level, and on June 1, 1917, the customs records show that the bonded warehouses were swept bare of stocks of cotton yarn. During the fiscal year 1918 the warehouses were again filled with yarns, and on July 1, 1918, the stock at New York amounted to 399,403 pounds. A large portion of the yarns warehoused in 1918 were electrical yarns and numbers 97/1, 98/1, and 117/1 accounted for about three-fourths of the total.

Table 2 is a chronological summary of the history of cotton yarn imports for consumption and of the amounts of revenue derived from the duties collected thereon from 1891 to 1918. There are also shown average invoiced prices in cents per pound and average rates of duty.

TABLE 2.—*Cotton yarn imports for consumption—Revenue.*

Fiscal year.	Quantity.	Value.	Duties collected.	Value per unit of quantity.	Actual and computed ad valorem.
	Pounds.			*Cents.*	*Per cent.*
1891	1,693,379	$866,732	$425,575	51.2	49.10
1892	1,450,713	674,609	335,587	46.5	49.75
1893	1,697,516	751,551	377,508	44.3	50.23
1894	730,715	317,460	158,131	43.4	49.81
1895	1,779,814	661,189	271,319	37.1	41.03
1896	2,330,687	850,081	321,716	36.5	37.85
1897	1,708,357	651,841	265,377	38.2	40.71
1898	1,742,951	657,598	289,122	37.7	43.97
1899	2,356,299	858,274	360,818	36.4	42.04
1900	4,674,180	1,945,361	667,292	41.6	34.30
1901	3,792,067	1,792,244	564,656	47.2	31.51
1902	4,505,351	1,871,192	656,858	41.5	35.10
1903	5,676,988	2,392,153	758,044	42.1	31.69
1904	5,135,376	2,252,096	716,746	43.8	31.83
1905	4,963,382	2,170,736	742,438	43.7	34.20
1906	5,216,210	2,402,735	776,542	46.1	32.32
1907	6,902,483	3,521,860	1,071,891	51.0	30.44
1908	7,014,237	3,766,804	1,026,831	53.7	27.26
1909	6,800,901	3,246,035	1,056,218	47.7	32.54
1910	8,809,174	4,289,058	1,380,389	48.7	32.18
1911	7,132,525	4,207,814	1,285,705	58.9	30.56
1912	6,739,549	4,013,926	1,265,925	59.6	31.54
1913	7,068,692	4,110,025	1,296,853	58.1	31.56
1914	6,853,235	4,092,072	947,441	59.7	23.15
1915	5,657,066	3,263,756	687,806	57.7	21.08
1916	8,279,878	5,159,872	1,110,169	62.3	21.52
1917	10,564,304	9,885,839	2,196,209	93.7	22.22
1918	5,687,641	7,482,475	1,726,580	131.6	23.08
Annual average	4,891,560	2,791,264	812,134	57.06	29.10

Invoice prices averaged lowest in 1899 with 36.4 cents a pound and highest in 1918 with $1.316 a pound. The extreme prices of 1917 and 1918, although due to abnormal war conditions, are not to be considered by themselves as a standard to record the change in the general level of yarn prices abroad. The average yarn count varies from year to year. In 1917 and 1918 the average count was higher than ever before; imports of coarse counts were discouraged, because of relatively higher prices abroad, and imports of fine lace and electrical yarns were stimulated in anticipation of possible future interruptions.

In the 28 fiscal years from 1891 to 1918, inclusive, there were imported for consumption a total of 136,963,670 pounds of cotton yarn, with a total value of $78,155,388. This gives an average value per pound of 57.06 cents for the period stated.

The total revenue produced by the duties on cotton yarns during the 28 years, 1891–1918, amounted to $22,739,746, which gives an average of $812,134 a year. The smallest revenue was obtained in 1894 with $158,131, and the highest in 1917 with $2,196,209.

During these 28 years the duties averaged 29.10 per cent of the invoiced values, ranging from a high of 50.23 per cent in 1893 to a low of 21.08 per cent in 1915.

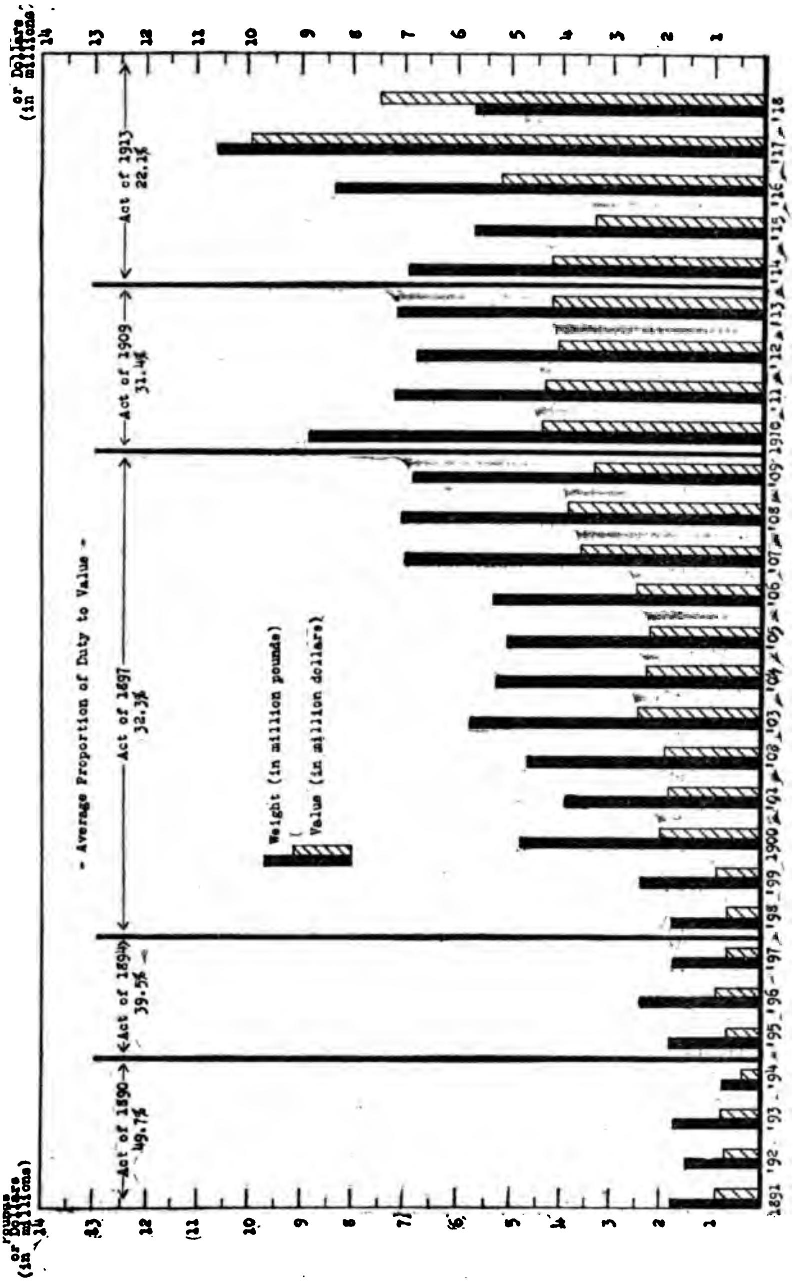

CHART A.

COURSE OF COTTON YARN IMPORT TRADE OF THE UNITED STATES: 1891-1918.

Showing weight and value of yarn imported for consumption during each fiscal year; also average equivalent ad valorem rate of duty for the period under each tariff act.

In considering the effect of tariff changes on quantity of imports it may be noted that the last five tariff laws went into effect on the following dates: October 1, 1890; August 27, 1894; July 24, 1897; August 5, 1909; and October 3, 1913. The effect of such tariff changes should therefore first appear in imports for the fiscal years ending June 30 of 1891, 1895, 1898, 1910, and 1914, respectively.

In 1891 the equivalent ad valorem duty on cotton yarn increased to 49.10 per cent from the 46.55 per cent of the preceding year; this was accompanied by a slight increase in the amount of cotton yarn imported, from 1,674,262 pounds to 1,693,379 pounds. In 1895 a substantial decrease in the average rate of duty was accompanied by a substantial increase over the unusually small amount imported in the preceding year. In 1898 an increase in the average rate of duty was accompanied by a slight increase in imports. In 1910 there was a sharp increase in imports, though the average rate of duty showed only a slight decrease, from 32.54 per cent in 1909 to 32.18 per cent in 1910. In 1914 a substantial decrease in rates of duty was accompanied by a decrease in quantity of imports.

It is clear from the above, even after taking into consideration the fact of the average equivalent rate of duty being affected by the average fineness of yarn counts imported, that a decrease in average height of duties has not necessarily been followed by an increase of imports or an increase in duties by a decrease of imports; in fact, the reverse has been the case in most of the instances noted. The logical deduction from the above facts is that imports of cotton yarn must consist largely of yarns unobtainable here in the qualities or quantities required, and that therefore fluctuations in quantity represent fluctuations of supply and demand in which the rate of duty plays but a subordinate part.

IMPORTS, BY QUARTERS, 1911–1918.

To show more closely the trend of imports preceding and following a tariff change, there is added herewith Table 3, which shows yarn imports for consumption by quarters for the fiscal years 1911 to 1918, inclusive.

TABLE 3.—*Imports of cotton yarn (in pounds).*

Fiscal year.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Aggregate annual.
1911	1,578,343	1,664,372	1,924,196	1,965,614	7,132,525
1912	1,433,758	1,606,311	1,784,826	1,914,654	6,739,549
1913	1,898,635	2,004,764	1,817,806	1,347,487	7,068,692
1914	1,111,591	[1] 1,878,271	2,008,227	1,855,146	6,853,235
1915	1,493,703	1,225,512	1,359,649	1,578,202	5,657,066
1916	1,578,238	1,697,360	2,428,350	2,575,930	8,279,878
1917	2,368,212	2,642,603	2,631,415	2,922,074	10,564,304
1918	1,999,715	1,482,963	986,514	1,218,449	5,687,641
Total	13,462,195	14,202,156	14,940,983	15,377,556	57,982,890
Per cent of aggregate annual	23.22	24.49	25.77	26.52	100

[1] *The last tariff went into effect Oct. 3, 1913, at the beginning of the second quarter of the fiscal year 1914.*

Quarterly statistics of imports for consumption were not collated prior to the fiscal year 1911, and it is therefore not practicable to extend this table back to cover previous tariff changes. The figures as given in Table 3 include changes made by the Bureau of Foreign and Domestic Commerce in the published quarterly figures to obtain the corrected total for each year.

The last tariff act went into effect October 3, 1913, so that the first quarter of the fiscal year 1914 was under the tariff act of 1909. In anticipation of the enactment of a lower tariff, a large part of the normal imports during the last quarter of the fiscal year 1913, as well as during the first quarter of the fiscal year 1914, were, on arrival, stored in bonded warehouses to await the change before being entered for consumption and paying duty. This is shown by the table above and also by the warehouse records.

Cotton yarn is not a seasonable article, and as brought out in Table 3, which covers a period of eight years, it is imported all the year round, imports averaging about the same for each quarter. The tariff act of 1913 apparently had little effect on the normal flow caused by supply and demand except that part of the normal imports for nine or ten months before the tariff act passed was stopped in warehouses and flowed out during the succeeding nine or ten months. It is probable that the cotton yarn imports during the fiscal year 1914, which were less than those for 1913 because of a lessened trade demand, would have been approximately the same if the tariff had not been changed at all. The damming up in bonded warehouses of the stream of imports is frequently caused by a slackened trade demand. For instance, on June 1, 1918, there were 413,276 pounds of cotton yarn stored at New York in bonded warehouses, which were bare of stocks on the same date the previous year. This was due to a speculative import temporarily overstocking the market in foreign yarns, for which there is at best a limited demand, and to the invoicing of these yarns at such unusually high prices that importers found difficulty in getting consumers to take them off their hands.

IMPORTS, BY CUSTOMS DISTRICTS, 1914 AND 1918.

Table 4 shows, for 1914 and 1918, imports for consumption of cotton yarn by districts. In 1914 New York received, by weight, 70.3 per cent of the total, and Philadelphia 18.6 per cent, as compared with 11.1 per cent at all other ports. Similarly, in 1918, New York received 75 per cent and Philadelphia 13.6 per cent, as compared with 11.4 per cent at all other ports.

TABLE 4.—*Cotton yarn imports for consumption.*

Customs district.	1914		1918	
	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*	
New York	4,815,957	$2,810,315	4,269,439	$5,589,973
Philadelphia	1,263,243	749,380	774,124	1,045,780
Chicago	131,779	105,439	205,356	256,737
Rhode Island	183,419	121,342	201,845	269,988
Connecticut	215,547	128,449	144,016	177,275
Massachusetts	223,963	167,314	86,759	137,458
All others	19,327	9,833	6,102	5,264
Total	6,853,235	4,092,072	5,687,641	7,482,475

The rank of the districts, other than New York and Philadelphia, varies from time to time, but Massachusetts, represented by Boston, usually follows the two leaders. Imports into the Rhode Island district are confined to Providence, while imports into the Connecticut district enter at Bridgeport and Hartford, so far as cotton yarns are concerned. Chicago ranked sixth in 1914 but moved up to third in 1918. Imports into other than these six districts—that is, into other than the seven ports of New York, Philadelphia, Boston, Providence, Chicago, Bridgeport, and Hartford—are negligible.

Philadelphia normally imports lace-curtain, lace, hosiery, and velvet yarns. During the war the import of knitting yarns in particular has greatly declined, but there has been an importation of fine electrical yarns, which is new business. Chicago imports mainly lace and lace-curtain yarns. Bridgeport and Hartford import chiefly velvet and lace yarns. Providence imports mainly weaving yarns, especially for the wool and mohair industries. Boston imports lace, weaving, and knitting yarns. New York preponderates to such an extent that it leads in the importation of practically all lines except velvet yarns and those required for weaving mixed wool or mohair goods.

IMPORTS, BY YARN RANGES, 1895–1918.

Table 5 groups imports of cotton yarns, for the period 1895–1918, as near as possible according to the yarn ranges into which imports are divided for tariff purposes under the act of 1913.

TABLE 5.—*Ranges of cotton yarn imported for consumption (in pounds).*

Fiscal year.	Up to 20s.	21s to 37s.	21s to 39s.	Up to 24s.	25s to 39s.	38s and above.	40s to 49s.	50s to 59s.	60s to 79s.	80s to 99s.	Over 99s.	Total.
1895	97,880	25,675				1,656,259						1,779,814
1896	388,211	25,224				1,917,252						2,330,687
1897	97,927	51,454				1,558,976						1,708,357
1898	153,285		277,207				146,206	169,655	625,767	93,240	245,550	[1] 1,742,951
1899	186,938		451,542				211,424	179,749	1,019,551	83,580	223,515	2,356,299
1900	590,556		987,041				513,658	457,748	1,537,994	175,979	411,204	4,674,180
1901	490,557		710,137				401,944	282,186	1,404,782	81,685	420,776	3,792,067
1902	554,379		754,080				627,863	401,877	1,645,012	118,354	403,786	4,505,351
1903	786,809		1,426,520				640,466	333,860	2,016,412	111,940	360,981	5,676,988
1904	871,433		947,258				406,265	244,389	2,194,199	97,735	374,097	5,135,376
1905	652,775		734,339				494,059	461,374	2,012,208	113,993	494,634	4,963,382
1906	610,390		982,317				542,871	542,357	1,886,118	138,995	513,162	5,216,210
1907	479,966		1,214,610				842,997	793,259	2,667,948	186,584	717,119	6,902,483
1908	706,721		1,220,261				892,092	835,459	2,668,892	107,675	583,137	7,014,237
1909	789,493		679,792				714,649	1,128,988	2,792,527	91,399	604,053	6,800,901
1910				892,236	716,261		759,784	948,907	3,627,558	135,451	852,733	[2] 8,809,174

Fiscal year.	Up to 24s.	21s to 40s.	Up to 30s.	31s to 40s.	41s to 50s.	51s to 60s.	61s to 80s.	81s to 100s.	Over 100s.	Total.
1911			397,834	516,778	486,581	1,542,018	2,146,885	390,655	749,589	[3] 7,132,525
1912			635,448	530,244	556,697	1,198,142	1,897,677	411,721	915,009	[4] 6,739,549
1913			695,037	459,026	478,121	1,206,016	2,138,274	486,005	838,623	[5] 7,068,692
1914	665,498	928,584			544,950	1,043,244	1,747,731	604,004	1,216,453	[6] 6,853,235

Fiscal year.	Up to 9s.	10s to 19s.	20s to 39s.	40s to 49s.	50s to 59s.	60s to 79s.	80s to 99s.	Over 99s.	Total.
1915	429,859	411,120	720,206	423,735	781,139	1,385,642	648,024	857,341	5,657,066
1916	534,285	214,255	968,691	532,976	1,130,670	2,150,930	1,465,553	1,282,518	8,279,878
1917	103,362	112,860	857,414	600,988	1,532,689	3,463,049	1,976,682	1,917,260	10,564,304
1918	23,543	32,759	235,874	209,771	699,485	1,940,471	1,328,766	1,216,972	5,687,641

[1] Includes 32,041 pounds of which counts not specified.

[2] Includes 876,244 pounds of which counts not specified.

[3] Includes 902,185 pounds of which counts not specified.

[4] Includes 594,611 pounds of which counts not specified.

[5] Includes 767,590 pounds of which counts not specified.

[6] Includes 102,771 pounds of which counts not specified.

Cotton yarn was not referred to by count or number in any American tariff act prior to that of 1894, so the first record of imports according to yarn counts is for the fiscal year 1895. For 1895–1897, imports can be arranged for partial comparison in one group embracing yarns up to 20s, and another group including yarns from 21s to 37s, but it is not possible to make any subdivision of the remainder, that is, yarns numbered 38s and above. For the period 1898–1909, under the tariff act of 1897, imports of cotton yarn were recorded by individual counts, it is therefore possible to arrange by groups for perfect comparison; with the exception that coarse yarns up to 20s must be grouped together. Under the tariff act of 1909 (except for 1910, when records were kept as for the previous period) it is not possible to group counts so as to obtain exact comparisons with the present ranges, because of the fact that about 10 per cent of the imports came in under an ad valorem catch-all clause and were not recorded by counts, and because of the classification of coarse and medium counts by ply and color which permit no accurate subdivision up to 30s. The exceptions and variations noted prevent as detailed a comparison as would otherwise be possible, but they are not sufficient to obscure the main features.

It is clear from Table 5 that the largest group imported is that of the range from 60s to 79s, inclusive, and that these counts have predominated in each year as far back as our records go, that is, for the period 1898–1918. This group may therefore be said to be the main point of contact between imported and domestic cotton yarns.

During the war there was a remarkable increase in the import of yarns finer than the range 60s to 79s and in 1917 and 1918, for the first time, there were more pounds of counts above 79s than there were of counts under 60s. The trend toward a larger proportionate amount of fine yarns seems to have been emphasized by the change in tariff and the war only accentuated this development. The tariff act of 1913, by maintaining unchanged the duties on lace while lowering the rates on lace yarns, gave a stimulus to the lace industry second only to that of the tariff act of 1909, which permitted temporary free entry of lace machines. Normally about one-half of the imports of cotton yarn were of 60s and finer; in 1917 and 1918 about three-fourths of the imports were of 60s and above.

IMPORTS BY YARN COUNTS, 1901–1910.

Records of imports of cotton yarn by individual yarn counts have been kept only for the years 1898 to 1910, inclusively. Subsequent to 1910 yarn imports have been recorded only by ranges of yarn counts.

Table 6 herewith records the amount of each count imported annually for the period 1901–1910, and averages for this period by individual counts, and also by the yarn ranges in use under the 1913 tariff classification. The main object in compiling this table is to set forth in detail the average imports during the first decade of the twentieth century in such form as to be readily comparable with future imports.

During the 10 years 1901–1910 the main count imported was 60s. This count, mostly in 2-ply, was largely used for lace curtains and embroidery, and also for knitting and weaving. It was followed successively, in order of quantity, by 40s, 70s, 78s, 58s, 68s, 30s, 36s, 50s, 100s, 76s, 120s, and 38s.

When the tariff was changed to include ranges ending with 9, such as 9, 19, 39, 49, 59, 79, and 99, the selection did not in all cases accomplish what it was apparently intended to do, that is, lay the heaviest burden on the counts mainly imported. Though the tendency has been to import most largely counts that are multiples of 10, there were, at the time when the tariff had little influence on the numbers selected for import, owing to the even gradation of the duties, large imports of yarns such as 78s, 58s, and 68s, especially by the curtain trade. Owing to the sudden increases at certain counts ending with 9, under the present system of grading the tariff, it has become customary to import 38s instead of 40s, 58s instead of 60s, and 98s instead of 100s; that this is not entirely due to the system of grading is evident from the fact that as far back as 1901–1910 relatively large amounts of the 38s and the 58s were imported. At that time, as to-day, there was a much larger import of 78s than of 80s. There is no tariff step at 69, and yet 68s is normally imported as much as 70s, or even more, although relative amounts vary from year to year. In 1901 there were only 41,226 pounds of 68s imported as against 306,224 pounds of 70s, but in 1909, under the same tariff, there were 597,672 pounds of 68s as against only 245,274 pounds of 70s. The substitution of 58s for 60s, of 68s for 70s, of 78s for 80s, is not necessarily an indication of tariff influences, for the cheapening afforded by lowering the finished count by two numbers is a factor of more importance; and domestic spinning mills, though normally producing more 80/2 than 78/2, for instance, yet produce large amounts of the counts ending in 8 as substitutes for counts that are multiples of 10.

TABLE 6.—*Counts of cotton yarn imported for consumption (in pounds).*

Yarn count.	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	Average 1901-1910, inclusive.
Up to 20	490,557	554,379	786,809	871,433	652,775	610,390	479,966	706,721	789,493	[1] 892,236	683,476
21	6,538	1,968	504	691	897	1,197	21,589	...	496	...	[2] 3,388
22	7,466	6,797	84,806	14,431	5,056	7,604	17,502	43,865	13,240	...	[2] 20,077
23	361	168	252	336	333	635	...	539	3,010	...	[2] 563
24	51,487	50,740	55,816	24,490	14,369	126,923	189,918	140,433	18,571	...	[2] 67,275
25	37,847	35,750	51,604	14,742	15,873	51,157	137,486	65,561	66,993	78,045	55,506
26	21,450	12,852	21,127	16,565	11,011	22,714	23,060	21,534	4,368	2,112	15,679
27	70,843	53,133	31,399	28,249	15,763	9,912	23,435	47,912	17,186	9,342	30,717
28	22,338	21,700	102,237	57,531	26,222	49,090	37,495	37,023	33,392	33,706	42,073
29	540	...	25	38	33	...	652	4,356	40	3,992	968
30	224,605	197,985	357,897	343,098	234,605	231,482	251,638	322,291	199,334	175,538	253,847
31	...	40	...	...	4	257	...	212	...	4,475	499
32	9,428	22,577	20,369	16,027	5,638	16,802	30,781	21,972	7,678	24,080	17,535
33	512	5,022	3,092	7,234	3,752	9,166	6,427	7,184	1,881	1,265	4,554
34	35,977	38,507	32,196	17,815	10,441	16,075	21,257	61,442	4,539	14,146	25,239
35	59,121	61,386	62,413	63,427	42,058	118,432	43,288	37,681	11,308	7,127	50,624
36	125,501	203,970	347,826	195,922	233,571	225,386	308,590	330,450	198,135	268,385	243,774
37	250	...	...	...	...	626	441	200	...	...	152
38	35,373	41,105	247,083	146,662	114,713	94,859	101,051	77,152	99,621	90,698	104,831
39	500	380	7,874	...	...	...	...	454	...	3,350	1,256
21 to 39	710,137	754,080	1,426,520	947,258	734,339	982,317	1,214,610	1,220,261	679,792	716,261	938,557
40	370,788	608,652	605,507	373,705	456,157	489,250	676,994	687,453	520,724	461,308	525,054
41	...	...	...	...	485	12,787	32,114	15,308	10,962	15,356	8,701
42	2,927	1,628	949	2,036	3,938	5,874	7,254	6,195	309	540	3,165
43	...	...	...	...	40	1,060	...	455	2,542	6,138	1,024
44	498	1,416	1,903	1,907	7,873	3,850	23,626	32,798	40,172	68,932	18,298
45	16,389	10,503	28,236	23,339	23,410	25,838	35,902	63,887	31,132	53,587	31,222
46	9,722	...	237	23	...	552	3	21,524	2,919	7,044	4,292
47	...	4,960	...	490	130	1,369	4,181	22,239	...	47	3,342
48	1,620	360	3,634	4,765	2,026	2,291	62,923	41,911	105,889	147,285	37,170
49	...	344	...	...	...	...	...	322	...	547	121
40 to 49	401,944	627,863	640,466	406,265	494,059	542,871	842,997	892,092	714,649	759,784	632,299
50	164,583	172,019	221,060	167,263	230,460	196,310	242,643	260,016	288,241	332,703	227,530
51	...	...	...	...	...	...	...	...	...	525	52
52	36	40	216	170	48	40	60	39	1,095	...	174
53	68	...	...	...	...	...	283	984	1,214	997	354
54	...	...	407	19,882	19,562	10,232	...	6,651	1,820	11,741	7,031
55	23,892	7,431	23,431	12,252	82,677	119,857	126,420	102,884	111,099	93,084	70,308
56	913	40,750	3,000	2,186	...	1,891	...	515	1,560	1,053	5,187
57	1,008	205	...	447	...	9,541	20,128	19,887	6,859	29,735	8,781

58	90,578	178,701	85,159	42,189	128,627	204,486	403,725	444,118	717,100	479,069	277,375
59	1,108	2,731	587					365			479
50 to 59	282,186	401,877	333,860	244,389	461,374	542,357	793,259	835,459	1,128,988	948,907	597,266
60	652,983	709,223	938,264	1,117,707	973,477	816,295	975,063	1,051,489	1,067,123	1,263,175	956,480
61				12	8						2
62									1,989	17,221	1,921
63			1,097	22,650						1,125	2,487
64		5						86		14,053	1,414
65	1,125		692		1,130	7,514	24,772	30,239	7,569	3,348	7,639
66				16,450	59	487		51,928		37,875	10,680
67							203		9,912	3,950	1,407
68	41,226	80,800	164,200	99,462	104,690	97,791	246,230	485,305	597,672	767,624	268,500
69										6	1
70	306,224	381,229	504,290	582,696	550,485	484,160	598,797	318,260	245,274	289,514	426,093
71					994					30	102
72	635		458	600	760	2,291	228	790	4,784	3,086	1,363
73		600		1,188	149	150	1,127	910		237	436
74		2,439		1,240	1,996			2,750		200	863
75	10,953	11,744	12,729	14,097	9,244	26,838	105,364	54,557	15,815	21,270	28,261
76	152,749	194,175	156,660	95,846	98,254	100,957	196,989	96,244	154,630	248,276	149,478
77	48		28			100		574		10,641	1,139
78	217,972	246,392	219,413	226,631	254,146	294,932	475,848	548,193	682,312	924,127	408,997
79	20,867	18,405	18,581	15,620	16,816	54,603	43,327	27,567	5,447	21,800	24,303
60 to 79	1,404,782	1,645,012	2,016,412	2,194,199	2,012,208	1,886,118	2,667,948	2,668,892	2,792,527	3,627,558	2,291,566
80	47,708	70,538	84,215	57,032	69,828	103,285	100,922	31,335	40,327	27,460	63,265
81					683		1,000		500		218
82				11	244		166	268	997		169
83					592	200	1,601		23		242
84				801	692			2,644	1,843	26	601
85	928	5	5,950	6,819	594	284			1,016	519	1,612
86										8,973	897
87										264	26
88	11			1,840				236			209
90	24,206	31,010	9,636	9,854	22,935	25,773	35,705	41,280	32,239	66,098	29,874
91						54	36				9
92							810	321	2,036	3,658	682
93						144	556	162			86
94								84			8
95	4,932	14,401	12,139	19,681	17,892	9,255	45,788	17,547	12,418	28,453	18,251
96								3,294			329
97					503						50
98	3,900	2,400		1,202	30			10,504			1,804
99				495							49
80 to 99	81,685	118,354	111,940	97,735	113,993	138,995	186,584	107,675	91,399	135,451	118,381

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[1] For 1910 includes Nos. 1 to 24 instead of Nos. 1 to 20, as for previous 9 years.

[2] Does not include imports for 1910, as imports of Nos. 21, 22, 23, and 24 were not shown separately for that year.

TABLE 6—*Counts of cotton yarn imported for consumption (in pounds)*—Continued.

Yarn count.	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	Average 1901-1910, inclusive.
100	162,411	222,668	168,247	172,237	250,247	195,220	252,391	254,559	167,350	289,770	213,510
102							485				49
103										170	17
104	30				320						35
105	105	340	255	148		289	522	1,188		6,564	941
106							84				8
108					128			10		308	45
110	37,831	14,541	10,273	13,041	17,142	22,419	44,188	53,952	53,094	73,346	33,983
111					593						59
112		640								246	89
113					606						61
114		60						9,772			983
115		994	1,209	7,154	6,938	1,642	16,261	7,265	597	2,491	4,455
116						741					74
117	100	1,200	2,813	1,405						891	641
118		2,078		791			264				313
119				296		500					80
120	137,149	65,570	79,631	102,895	129,424	170,802	249,929	115,858	166,714	187,144	140,512
121	251										25
124					417						42
125	3,383	2,702	240	1,044		2,610	2,450	608	106	1	1,314
126	239	390	178	257		480					154
130	5,413	7,648	8,141	6,001	10,547	8,899	19,369	14,179	25,752	37,393	14,334
133										299	30
134										823	82
135	2,073	899	2,229		3,011	619	2,359	112	1,316	8,062	2,068
138				1,500		8,000	13,890	13,544	9,487	10,225	5,665
139					430					533	96
140	41,483	43,487	52,133	42,338	46,018	48,015	51,081	53,992	83,213	115,315	57,708
141			1,284		424						171
142		96	2,553								265
143		144									14
144		110									11
145	1,454	1,447	949	889	1,401	500	150	290	110		719
147		360			600					70	103
149		1,944	4,674	385							700
150	5,982	8,355	8,889	7,208	8,371	17,191	20,893	3,795	9,601	19,167	10,945
152	1,062				492						155
154					1,379						138
155		1,395				100	642		66		220
156					100						10
157			480	3,745	296						452
158					403					650	105

159				1,185	152						134
160	11,339	20,672	9,552	5,070	11,825	24,068	30,559	36,614	67,597	74,156	29,145
161						700					70
162				1,599	220					536	236
163	4,448		395	198							504
165			44								4
170	1,130	993	1,614	1,059		1,626	2,846	5,219	4,018	5,476	2,398
171				1,481	1,191						267
172					123						12
173										600	60
174						610				453	106
175	1,524		1,323			50					290
177				198							20
180	1,659	3,304	3,331	1,289	1,240	6,169	5,598	11,012	12,560	10,774	5,694
188										188	19
190						90	392	383	1,065	1,999	393
194	455			237							69
199				198							20
200	1,113	1,721	522	187	591	1,792	2,618	247	1,357	3,310	1,346
220		10					75	490	50	60	68
222	131										13
240	11	18	19	62				13		183	31
250			3				26	15		1,432	148
270					5	30	47	20			10
280										30	3
300										2	
370										66	7
Above 99	420,776	403,786	360,981	374,097	494,634	513,162	717,119	583,137	604,053	852,733	532,448
Minimum ad valorem and small amounts of inclusive numbers										876,244	87,624
Grand total	3,792,067	4,505,351	5,676,988	5,135,376	4,963,382	[1] 5,216,210	6,902,483	7,014,237	[2] 6,800,901	8,809,174	5,881,617

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[1] "Commerce and Navigation" shows a total of 5,245,141.39, which is a misprint for 5,246,141.39. This total, however, includes 29,931.64 pounds of yarns numbered from 490s up to 913s. Such fine counts of yarn are not commercially used in the cotton industry and these are really artificial silk yarns which were, by a decision afterwards reversed, in 1906 classified as cotton yarn by reason of similitude. Deducting the amount of such artificial silk yarn, we get the correct total of cotton yarn imported in 1906 as 5,216,210 pounds.

[2] The 1909 total is correctly stated as 6,800,901 pounds; this is shown by adding up the figures given in Commerce and Navigation where the total was misprinted as 15,800,900.46.

With the exception of 1910 the yarns imported in the foregoing 10-year period were entirely under one tariff, that of 1897, and therefore responsive alone to the influence of supply and demand. The change in tariff rates in 1910 was small. The large increase in imports in 1910 was probably more largely due to the free import of lace and lace-curtain machines, which caused the owners to turn to England as the best available source of supply, in fact the only source, for "prepared" yarns and for yarns of the highest range. The increase in 1910 in imports of 140s may be considered especially indicative of the increased use of lace machines.

IMPORTS ACCORDING TO BASIC AND ADVANCED CLASSIFICATIONS, 1895–1918.

Cotton yarn as it comes from the spindle is, if it has not been subjected to combing, in its cheapest and simplest form, and may be distinguished as "gray carded single yarn, not processed." Gray carded single yarn may be shipped in the state in which it comes from the spindle; that is, on cops from mules or on bobbins or quills from the spinning frame; or it may be reeled into skeins or wound, one or more ends at a time, into tubes or cones, or it may be put up in other special ways before shipment. When several ends are wound together into a cone or other form the yarn is said to be "grouped," but grouping does not change the condition of the yarn in any way and is therefore not a manufacturing process. Grouped yarns may be either single or ply yarns; if they were single yarns before being grouped, by multiple winding or otherwise, they are still single yarns after grouping.

Gray combed single yarn, not processed, differs from gray carded single yarn, not processed, by reason of the fact that in the course of manufacture it was subjected to the additional process of combing.

Yarns that have been twisted together are ply yarns. Ply yarns made by twisting together ply yarns are distinguished as cable yarns.

"Processing" includes gassing, mercerizing, preparing, polishing, or other special finishing. Cotton yarn may be subjected to any of these processes and still be "gray carded single yarn" or "gray combed single yarn."

Twisting or processing, to whatever extent carried, necessarily increases the cost of the yarn above that of the unprocessed gray single yarn as it came from the spinning frame.

The tariff acts of 1894, 1897, 1909, and 1913 all levied duties on cotton yarn according to the same two underlying principles: First, that yarns should be divided into two groups, one being given the *basic or minimum rates*, and the other subjected to advanced rates, and second, that in each group the duties should be progressive according to increases in the fineness of the count.

Table 7 is compiled for the purpose of contrasting the imports of cotton yarn under the basic and under the advanced classification as far back as these were separately enumerated, that is, to the tariff act of 1894.

TABLE 7.—*Cotton-yarn imports for consumption.*

Fiscal year.	Basic classification (lowest range of duties).		Advanced classification.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Pounds.		*Pounds.*		*Pounds.*	
1895	977,555	$298,572	[1] 802,259	[1] $362,617	1,779,814	$661,189
1896	1,143,556	342,114	1,187,131	507,967	2,330,687	850,081
1897	757,656	238,045	950,701	413,796	1,708,357	651,841
1898	154,091	42,363	1,588,860	615,235	1,742,951	657,598
1899	63,518	17,030	2,292,781	841,244	2,356,299	858,274
1900	171,184	50,354	4,502,996	1,895,007	4,674,180	1,945,361
1901	78,709	20,087	3,713,358	1,772,157	3,792,067	1,792,244
1902	109,759	26,309	4,395,592	1,844,883	4,505,351	1,871,192
1903	119,502	45,591	5,557,486	2,346,562	5,676,988	2,392,153
1904	73,126	24,548	5,062,250	2,227,548	5,135,376	2,252,096
1905	106,276	33,970	4,857,106	2,136,766	4,963,382	2,170,736
1906	137,005	47,556	5,079,205	2,355,179	5,216,210	2,402,735
1907	223,052	92,310	6,679,431	3,429,550	6,902,483	3,521,860
1908	250,377	124,663	6,763,860	3,642,141	7,014,237	3,766,804
1909	188,445	79,459	6,612,456	3,166,576	6,800,901	3,246,035
1910	91,954	38,139	8,717,220	4,250,919	8,809,174	4,289,058
1911	64,874	26,962	7,067,651	4,180,852	7,132,525	4,207,814
1912	105,594	33,015	6,633,955	3,980,911	6,739,549	4,013,926
1913	117,075	33,955	6,951,617	4,076,070	7,068,692	4,110,025
1914	1,602,896	738,218	5,250,339	3,353,854	6,853,235	4,092,072
1915	1,391,368	624,697	4,265,698	2,639,059	5,657,066	3,263,756
1916	1,934,186	1,026,399	6,345,692	4,133,473	8,279,878	5,159,872
1917	3,578,460	2,965,776	6,985,844	6,920,063	10,564,304	9,885,839
1918	1,703,627	1,959,751	3,984,014	5,522,724	5,687,641	7,482,475

[1] Includes 119,224 pounds valued at $54,151, imported July 1–Aug. 24, 1894, under tariff act of 1890.

If the basic classification be defined in positive terms, instead of the negative terms used in the tariff acts, it is found to include under the various tariff acts the following:

1894, gray carded single yarns, not grouped.
1897, gray carded single yarns, not grouped.
1909, gray carded single yarns, not grouped, not mercerized.
1913, gray carded yarns, single or ply, not mercerized.

The advanced classification included, under the tariff acts of 1894 and 1897, cotton yarns "Colored, bleached, dyed, combed, or advanced beyond the condition of singles by grouping or twisting two or more single yarns together." The wording of the advanced classification in the 1909 tariff act was the same with the addition of yarns, single or ply, that had been subjected to the mercerizing process. Under the tariff act of 1913 the advanced classification include cotton yarns, single or ply, "Combed, bleached, dyed, mercerized, or colored."

Table 7 *shows that* imports under the tariff act of 1894 were *divided almost evenly* between the basic and the advanced classifications but that under the tariff acts of 1897 and 1909 in no year did the imports under the basic classification amount to as much as 5 per cent of the total. Under the tariff act of 1913 almost a third enters under the basic rates and a little over two-thirds under the advanced rates. The change since 1913 has been due mainly to the fact that the act of that year abolished the differential on ply yarns and thereby permitted gray carded ply yarns to enter under the lower range of duties. Incidentally the tariff act of 1913 also abolished the differential on grouping, which is not, as twisting, a manufacturing process but only a minor method of putting up yarn for sale or manufacture. The tariff act of 1913 continued the provision inaugurated in 1909 whereby mercerized yarn, whether single or ply, is subjected to advanced rates, although this discrimination is not imposed in the case of yarns processed by gassing or by any other method of finishing.

RELATION OF IMPORTS TO DOMESTIC PRODUCTION.

There remains to be considered the relation of imports to domestic production of cotton yarn.

The domestic production of cotton yarn is officially ascertained every five years by the Bureau of the Census. According to the Census figures, the production increased from 1,467,565,971 pounds in 1899 to 2,170,578,612 pounds in 1914, an increase of almost 50 per cent in 15 years. The Census classifies cotton yarns as follows: (1) Coarse, including 20s and under; (2) medium, including 21s to 40s; and (3) fine, including all above 40s. The production of coarse counts amounted to 57.94 per cent of the total in 1899 but decreased to 45.58 per cent in 1914; the production of medium counts increased from 36.81 per cent in 1899 to 47.28 per cent in 1914; while the production of fine counts above 40s increased from 5.25 per cent of the total in 1899 to 7.14 per cent of the total in 1914. Both absolutely and relatively the greatest increase in domestic production during the 15 years between 1899 and 1914 was in the range of medium counts, Nos. 21 to 40.

The great bulk of the imports, two-thirds to three-fourths, is normally composed of counts finer than 40s, so that foreign competition in yarns is mainly on fine counts and particularly on the range between 60s and 79s.

Table 8 compares the amounts of cotton yarn produced and sold with the amounts imported in the last four census years. It shows that imports are normally around one-third of 1 per cent of the total domestic production, though on the range of fine counts, above 40s, they ran up as high as 3.39 per cent in 1909 and 3.33 per cent in 1914.

TABLE 8.—*Production, sales, and imports of cotton yarns.*

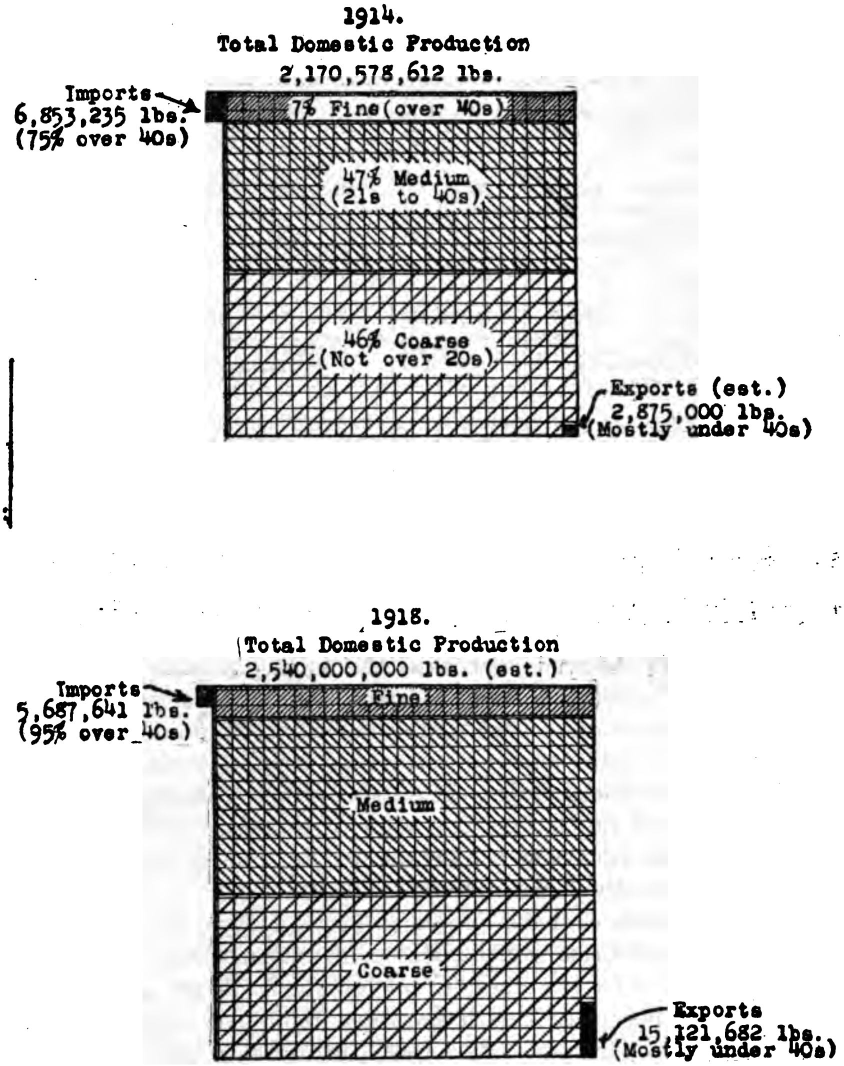
	Up to 20s.	21s to 40s.	Above 40s.	Total.
1899.				
Total domestic production....pounds..	850,203,953	540,166,147	77,195,871	1,467,565,971
Total domestic sales..............do....				332,302,621
Imports for consumption........do....	186,938	[1] 451,542	[2] 1,717,819	2,356,299
Per cent imports are of production.....	0.02	0.08	2.23	0.16
Per cent imports are of sales...........				0.71
1904.				
Total domestic production....pounds..	803,764,679	601,971,584	123,747,455	1,529,483,718
Total domestic sales..............do....				364,634,763
Imports for consumption........do....	871,433	947,258	3,316,685	5,135,376
Per cent imports are of production.....	0.11	0.16	2.68	0.34
Per cent imports are of sales...........				1.41
1909.				
Total domestic production....pounds..	1,014,069,688	866,328,605	157,255,429	2,037,653,722
Total domestic sales..............do....				470,370,995
Imports for consumption........do....	789,493	679,792	5,331,616	6,800,901
Per cent imports are of production.....	0.08	0.08	3.39	0.33
Per cent imports are of sales...........				1.45
1914.				
Total domestic production....pounds..	989,413,874	1,026,306,852	154,857,886	2,170,578,612
Total domestic sales..............do....				497,986,999
Imports for consumption........do....	[3] 665,498	[4] 928,584	5,156,382	[5] 6,853,235
Per cent imports are of production.....	0.07	0.09	3.33	0.32
Per cent imports are of sales...........				1.38

[1] 21s to 39s.
[2] Above 39s.
[3] Includes colored, bleached, dyed, combed, and ply yarns, 21s, 22s, 23s, 24s.
[4] Does not include colored, bleached, dyed, combed, or ply yarns, 21s, 22s, 23s, 24s.
[5] Includes 102,771 pounds of which counts not specified.

The real competition is not with the total domestic production, as most of the yarns produced are used in the mills where spun, but with the domestic sales. Less than a fourth of the domestic production is offered for sale, and imports rarely amount to as much as 1½ per cent of such domestic sales. It is impossible to compare accurately the proportion of imports to the sales of domestic yarn in coarse, medium, and fine ranges as the census does not make these divisions in regard to domestic yarns offered for sale.

Of the fine yarns over 40s produced in the United States in 1914, according to the census reports, Massachusetts made 54.02 per cent, Rhode Island, 13.63 per cent, Connecticut, 10.46 per cent, North Carolina, 9.04 per cent, South Carolina, 6.59 per cent, and other States only 6.26 per cent. As imports are mainly of counts above 40s, the States named are therefore the ones most directly interested in the competition of cotton yarns from abroad, though it is not recorded what amounts of fine yarns are actually offered for sale in competition with those imported.

CHART B.



COTTON YARN.

RELATION OF IMPORTS AND EXPORTS TO VOLUME OF DOMESTIC PRODUCTION IN 1914 AND 1918.

Showing also character of domestic and imported yarns according to fineness.

Scale: 4,000,000 pounds to each small square.

CHARACTER AND USES OF IMPORTED COTTON YARNS BY INDIVIDUAL CONSUMING INDUSTRIES

CHAPTER III.

CHARACTER AND USES OF IMPORTED YARNS.

By individual consuming industries as shown by special investigation of 91.2 per cent of 1914 and 92 per cent of 1918 imports for consumption.

INTRODUCTION.

The previous chapter was devoted to the presentation and discussion of various tables compiled to illustrate in concise and convenient form the trend of the import trade in cotton yarns, so far as recorded in published statistics. These tables, made up from import statistics printed in the annual "Commerce and Navigation of the United States," enable one to follow the course of the imports and to trace changes in their volume and value and in the amount of revenue derived in a series of years under various rates of duty. A study of the published data, however, showed that much information pertinent to tariff use could not there be found and that it was advisable to obtain one or more cross sections along the course of imports.

The fiscal years 1914 and 1918 were decided upon as the best for analysis in this connection, the former as being the last normal year and therefore affording a good background for the latest year, 1918, under war conditions.

A special investigation was undertaken of all invoices received during these two years, and all pertinent data on such invoices were transferred to cards. By using this card system, the total and subtotals of any desired classification were readily obtainable.

Among the objects sought in this special study were the amounts imported of each particular count and ply; the amounts that were carded as compared with those combed; the amounts that were in the gray, or bleached, or dyed; the amounts that were subjected to special finishing processes, such as mercerizing, gassing, preparing, or polishing; the uses of imported yarns and the reason why foreign yarns were preferred in certain industries; the particular kinds of yarns supplied by each country; the main centers of origin and the main importing centers.

Detailed information was desired as to all the yarns imported during 1914 and 1918. It was found, however, that it was impossible to obtain the necessary details for all cotton yarns recorded as imported for consumption during these two periods, for the reason that the bonded *warehouse records* of the customs were not kept so that amounts withdrawn and entered for consumption could be readily correlated with particular invoices. As absolutely complete records were not available, it was finally decided to confine the investigation to the six main customs districts importing cotton yarn, that is, to New York, Philadelphia, Chicago, Rhode Island (Providence), Connecticut (Bridgeport and Hartford), and Massachusetts (Boston). The amounts imported into Buffalo, Rochester, and all other districts were negligible.

Of 6,853,235 pounds officially recorded as imported for consumption during the fiscal year 1914 detailed data were obtained from invoices comprising 6,247,427 pounds, or 91.2 per cent; while of 5,687,641 pounds imported for consumption in 1918, detailed data were obtained from invoices comprising 5,232,360 pounds, or 92 per cent.

During the course of the invoice investigation, information was requested of each importer as to the industries for which his imports were intended, and prominent importers and manufacturers using foreign yarns were interviewed as to special features. It was found that the trade in general was interested in having more light thrown on various phases of the industry and both manufacturers and importers cooperated willingly to bring out details as to the use of and the reasons for the import of foreign cotton yarns.

Table 9 is a key to the trade in foreign yarns. It shows the uses of cotton yarns imported in the fiscal years 1914 and 1918. Following the table is a discussion of the nature of the yarns imported for each industry. The next chapter is devoted to a discussion of the imports according to method of manufacture, color, count, ply, and finish, and sets forth the main phases of this specialized import trade.

TABLE 9.—*Uses of imported cotton yarns.*

Consuming industry.	Cotton yarn imports for consumption.			
	1914		1918.	
	Quantity (pounds).	Per cent of total.	Quantity (pounds).	Per cent of total.
Curtain (ppd.[1] yarns)	444,716	7.12	861,850	16.47
Curtain (unppd. yarns)	714,165	11.43	563,245	10.76
Lace (ppd. yarns)	639,692	10.24	713,494	13.64
Lace (ppd. D. S.[2] yarns)	198,301	3.17	44,427	.85
Lace (unppd. yarns)	257,944	4.13	58,845	1.12
Bobbinet	7,410	.12	1,614	.03
Total lace, curtain, and bobbinet	2,262,228	36.21	2,243,475	42.88
Weaving (voile yarns)	48,363	.77	278,532	5.32
Weaving (crepe yarns)	14,921	.24	1,633	.03
Weaving (Turkey red yarns for towels)	202,879	3.25	63,950	1.22
Weaving other cotton cloths	388,789	6.22	92,487	1.77
Weaving mixed silks	653,679	10.46	304,647	5.82
Weaving silk velvets	233,992	3.75	134,549	2.57
Weaving wool or mohair mixtures	151,894	2.43	82,694	1.58
Total cloth	1,694,517	27.12	958,492	18.32

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[1] *Ppd. is abbreviation for* "prepared." This process is described on p. 63.

[2] *D. S. is abbreviation for* "double-spun." This process is described on p. 73.

TABLE 9.—*Use of imported cotton yarns*—Continued.

Consuming industry.	Cotton yarn imports for consumption.			
	1914		1918	
	Quantity (pounds).	Per cent of total.	Quantity (pounds.)	Per cent of total.
Silk hatband	180,178	2.88	114,702	2.19
Silk ribbon	42,868	.69	47,497	.91
Woven label	37,310	.60	58,600	1.12
Typewriter ribbon	6,922	.11	11,593	.22
Polished-yarn wares	205,094	3.28	32,340	.62
Other narrow wares	15,125	.24	10,222	.20
Total narrow wares	487,497	7.80	274,963	5.26
Knit gloves	....	....	635,201	12.14
Hosiery and other knit goods	1,050,465	16.81	272,238	5.20
Total knit goods	1,050,465	16.81	907,439	17.34
Covering electrical wires	12,256	.20	651,887	12.46
Embroidery	549,609	8.80	101,031	1.93
Thread making	135,628	2.17	69,498	1.33
Harness twine	55,227	.88	25,575	.49
Grand total	6,247,427	100.00	5,232,360	100.00

INDIVIDUAL CONSUMING INDUSTRIES.

LACE-CURTAIN YARNS.

The lace-curtain industry is the largest user of imported cotton yarns, and its requirements therefore deserve careful consideration.

The Nottingham lace-curtain industry has been firmly established in this country for more than a score of years, and domestic manufacturers produce more than 90 per cent of such curtains used in the United States. The industry has grown to include 500 machines, of which 450 are located in Pennsylvania, 29 in New York, 20 in Illinois, and 1 in New Jersey. Practically all of these machines were made in England, and the manufacturers had to pay duty as well as freight and other charges before they could start manufacturing. They have succeeded in obtaining a large proportion of their requirements of ordinary yarns locally, but still have to import and pay duty on all of their brass-bobbin yarns, as these are not made here, as well as a portion of other yarns of fine counts or special qualities for which suitable substitutes are as yet unobtainable in this country.

The American industry includes Nottingham lace-curtain machines of from 6 to 18 points or bobbins to the inch, which make curtains with 6 to 18 meshes to the inch. The odd-numbered points of 7, 9, 11, 13, and 15 are known in the curtain industry as bastard gauges and are not in general use. Approximately 60 per cent of the total number of *American lace*-curtain machines are of 8 point and coarser, and 40 per cent are of 10 point and finer. The market tendency toward a shorter and narrower curtain reflects the changes in architecture and the modern style of hanging the curtain to the sill instead of to the floor. As the gauges of curtain machines are in no wise interchangeable, this market trend has made possible a finer curtain at the same price, and 6-point curtains are therefore not as freely used as in years past. The trend toward finer-point curtains necessarily includes a trend toward the use of finer yarns.

In making a fabric on a lace-curtain machine it is necessary to have at least three sets of yarn, instead of two sets as in the weaving of ordinary cloth on a loom. These three sets of yarn consist of a warp yarn, known as the main warp (or ground warp) yarn; a spool yarn, which takes the place of the filling on a plain loom; and the so-called brass-bobbin yarn, which acts as a binder between the warp and the spool yarns by spiraling around the warp. For producing special types of curtains there may be used an additional beam warp or an additional spool yarn. The extra beam yarn is used to get a variety of grounds, such as cross ground, madras, bar net, or fillet. Spool yarn is used for ornamentation, and when the ornamentation takes the form of a shaded effect by reason of two counts of yarn, or by a contrast in shade, an extra bank of spools is used and the yarn is known in the trade as fine-spool yarn.

Brass-bobbin yarns for curtains.—It should be noted that the brass bobbins used in the three types of lace machines (using "lace" in its general sense as including lace curtains, fancy laces, and bobbinet, each of which is made on a special type of machine) are entirely different from, and have no resemblance to, the ordinary wooden bobbins used on spinning machines; and that brass-bobbin yarn, sometimes known simply as bobbin yarn, represents a special type of yarn. Lace curtains are "made" on a beam at the top of the machine by intertwisting thousands of vertical warp and spool yarns with thousands of bobbin yarns carried in thin chariots which swing pendulum-like back and forth in an unbroken line, shifting at each swing one or more spaces or "gaits" to the right or left. The chariots are guided in their reciprocating course by grooves and each chariot holds, by means of a spring, a brass bobbin. These brass bobbins are made up of thin rolled-brass disks, grooved on their inner edges, and riveted together. Each brass bobbin has a square central orifice which is used in sliding a number of them together on to a square shaft where they are refilled with yarn. This square shaft is revolved and an end of yarn is guided on to each circumferential groove. When filled with yarn the bobbins are taken off the square shaft and placed in the thin chariots or carriages, and these are then ready for use on the machine. Brass-bobbin yarns are imported in the skein, put up in 10-pound bundles, usually 50 bundles to a bale.

In order to get as many yards as possible on each brass bobbin, and thus cut down the number of stoppages for renewal of bobbins, the yarn is "prepared" by being passed in the hank through the rollers of a special "yarn-preparing machine." This calendering process flattens the yarn from a round to an oblate shape, renders it more flexible, and also polishes it in the process. In "preparing," the yarn is usually greased as well as calendered, as greasing makes it more supple and elastic and thus better able to withstand the hard treatment to which it is subjected on the machine. The lubricants usually employed are cocoanut oil, lard, or mutton fat.

The weight of the curtain, as it is being formed, hangs largely on the brass-bobbin yarn; this yarn must therefore be not only smooth and uniform but must be made of long staple cotton and spun and doubled carefully so as to possess the strength to withstand the abnormal strain. The standard breaking weights for brass-bobbin yarns, using a strength tester which handles a lea of 120 yards, are greater than for ordinary yarns and are usually stated as follows:

Brass-bobbin yarns for curtains.

Counts.	Standard breaking weights in pounds.
58/2	108–112
68/2	105–108
78/2	95–100
98/2	85– 87

As previously stated, the "point" of the machine indicates the number of bobbins working in 1 inch of space, As they must run free there is a count of brass-bobbin yarn for each machine which gives the best results, and those counts are uniform in the trade. Thus for the 6-point machine there is normally employed 58/2 brass-bobbin yarn, for the 8 and 10-point machines there is used 68/2, for the 12-point 78/2, for the 14-point and 16-point 98/2. The lace-curtain machine rarely uses yarns finer than 98/2. The length of yarn that can be wound on a brass bobbin varies according to the size of the bobbin and the count of the yarn, but is usually between 80 and 180 yards. For the most part, the more modern the machine the larger the bobbin, so as to reduce the percentage of stoppage for renewals and also the percentage of waste which is necessarily made whenever bobbins are replenished with yarn.

Brass-bobbin yarns are almost always required in the two-ply. They are mainly of Egyptian cotton though sea-island is used for the best *quality*. Those under 78/2 are always carded, usually being invoiced as "prepared supercarded gray." Some of the 78/2 is carded but most of it is combed, whereas the 98/2 is always combed. Brass-bobbin yarns for curtain work are imported and used almost entirely in the gray state.

The fact should be emphasized that the American lace-curtain industry is absolutely dependent on English mills; in fact, almost on a single English mill, for this essential article of brass-bobbin yarn, without which no curtain can be made.

Main-warp and other beam yarns.—The main counts used, with their sources of supply, are as follows:

28/2 carded	Domestic manufacture.
40/2 carded or combed	Domestic manufacture.
50/2 carded or combed	Domestic manufacture.
58/2 carded Egyptian	English manufacture.
68/2 carded Egyptian	English manufacture.
78/2 carded or combed, Egyptian or sea-island	English manufacture.

The English produce carded yarns of a fineness considerably beyond what is ordinarily considered possible in this country without combing. The English spinners do not commence to comb yarns for general use in the lace-curtain industry until they arrive at 78/2, whereas, as above noted, Americans start combing at a much coarser point in order to get satisfactory yarns. Beam yarns for curtain work are not, except occasionally for special work, required to be either gassed or prepared. They are usually coarser than the brass-bobbin yarns with which they are intertwisted.

Spool yarns.—The main counts used for spool work, including fine spool work, are as follows:

20/2 carded Peeler.
24/2 carded Peeler.
30/2 carded Peeler.
40/2 carded or combed Peeler.
50/2 carded or combed Peeler.
60/2 combed Peeler.

The spool yarns are practically all of domestic manufacture.

Imports of curtain yarns, by counts and sources (in pounds).

Prepared (count).	1914	1918	Not prepared (count).	1914	1918
58/2	22,550	275,350	39/2	10,333	7,500
59/2	21,100	....	48/2	19,700	109,200
60/2	93,150	....	58/2	200,250	130,500
68/2	178,250	159,000	59/2	55,900	4,500
70/2	17,100	238,700	60/2	20,000	....
78/2	78,894	145,600	68/2	165,317	98,050
98/2	22,135	40,600	70/2	106,462	97,500
99/2	5,418	....	78/2	102,700	102,400
All other	6,119	2,600	78/3	8,600	....
			98/2	21,715	8,000
			All other	3,188	5,595
Total	444,716	861,850	Total	714,165	563,245

Total lace-curtain yarns (in pounds).

Invoiced from—	1914	1918
Manchester	1,016,418	1,178,730
Bolton	50,200	92,000
Nottingham	39,883	90,865
Huddersfield	14,900	
Rochdale	10,030	
Dewsbury	10,000	22,500
Oldham	6,457	
Slaithwaite	6,000	11,500
Crefeld	3,393	
Macclesfield	1,000	
Settle	600	
Mansfield		15,500
Milnsbridge		14,000
Total	1,158,881	1,425,095

The foregoing tabular statements show that the imports of lace-curtain yarns, so far as shown by the available invoices, totaled 1,158,881 pounds in 1914 and 1,425,095 pounds in 1918. The main counts imported in 1914 were 68/2 (with a total of 343,567 pounds), 58/2, 78/2, 70/2, 60/2, 59/2, and 98/2; the main counts imported in 1918 were 70/2 (with a total of 336,200 pounds), 58/2, 68/2, 78/2, 48/2, and 98/2 in the order named. The trend in the domestic lace-curtain demand has been toward an increased production of finer-point curtains; for example, those made on the 12, 14, and 16-point machines and a decrease in output from the coarser machines, such as the 6 and 8 point. This would necessarily mean the importation of more of the finer and less of the coarser yarns in the range used by the curtain industry. This tendency, however, is not very apparent in the table of imports during 1918. The reason, of course, is that a large percentage of the lace-curtain machines were not at that time working on curtains at all, but instead were making a substitute for mosquito netting, which required mainly the coarser counts under 70/2. The lace-curtain industry was called on by the Government to adapt its machines to such work because of the impossibility of getting a sufficient supply of the regular square-mesh mosquito netting.

It is seen that the imports of the prepared brass-bobbin yarns, a specialty not made in this country, almost doubled. A good part of the increase was made necessary by the increased production and poundage obtainable by the machines working, with Jacquards eliminated, on substitutes for mosquito bars. The importation of warp yarns, which are not required to be prepared or of such fine quality, decreased. The American cotton mills now make satisfactory yarns up to 78/2, and during 1918 they had the advantage of being able to sell for less than the prices for which yarns could be delivered from England.

The tables also serve to bring out the fact that lace-curtain yarns are invoiced mainly from Manchester, only small amounts coming from a few other centers.

The importation of lace-curtain yarns is peculiar in that the American industry is supplied almost entirely by one firm of British cotton doublers which makes a specialty of extra strong super lace-curtain yarns. Of the 1,158,881 pounds shown as imported in 1914 this firm supplied 1,003,568 pounds, while of the 1,425,095 pounds shown as imported in 1918 the same firm supplied no less than 1,167,730 pounds. The firm mentioned not only supplies the great bulk of the imports, but has such a reputation for strong yarns of unvarying quality that it usually obtains a higher price, by about 5 per cent, than most of its competitors. Its trade is well established and maintained with ease. A representative visits America once or twice a year, names the prices his firm has decided on for the coming season, and each of 10 lace-curtain mills orders the number of pounds it thinks it will need. The mill is usually allowed the option of later specifying the particular counts it will require in order to make up the total weight ordered, and also the dates of shipment. Shipments are made direct from the British doubler to the American mill, the yarn importers rarely entering into this trade, but payment is made to The Fine Cotton Spinners' and Doublers' Association, of which the doubler is a branch.

Statements by the trade.—The following statements by six lace-curtain manufacturers are given as indicative of the opinion prevalent in the industry as to the necessity for the import of lace-curtain yarns. There is added a statement from a large American cotton spinner which affords another point of view.

All yarns used in the domestic lace curtain industry are special twist and special size skeins. This applies to both imported and domestic yarns. In our experience we have never found domestic yarn to take the place of imported yarn for curtain manufacture. There are many reasons for this—the staple and grade of Egyptian cotton used by the foreign spinners who make a specialty of this quality of yarn, also experienced help and probably, to some extent, climatic conditions. It is absolutely essential in brass-bobbin yarns that the count be true to number, otherwise the loss of yarn, due to stripping the wide bobbins caused by such uneven yarn, is tremendous. Foreign brass-bobbin yarns are carefully inspected and each bundle contains a printed tag showing the name of the mill and a check number for the doubler, the clearer, the gasser, the preparer, and the examiner who handle that particular bundle. It is practically all imported. Domestic yarn of this quality has not the required strength or uniformity of count especially necessary in bobbin yarn for the reason that the strength and wearing qualities of a curtain is directly as the strength of the brass-bobbin yarn. (Curtain Manufacturer No. 1.)

Although all the high-class American spinners have attempted to manufacture brass-bobbin yarns they have never been successful in competing with the English market. In some instances they have equaled the quality, but when they do this *they have been unable to* equal the price, in spite of the duty. The production of this yarn requires special machinery and special treatment, and thus far no American spinner has seen fit to go to the expense of installing enough machinery to supply the domestic demand for this particular material. (Curtain Manufacturer No. 2.)

Regret to advise that so far we have found no prepared domestic yarn that could replace the English bobbin yarn to advantage. Several of our competitors, we understand, have experimented with domestic yarns but have finally abandoned them, owing to lack of uniformity in standard of finish and strength, mainly strength. (Curtain Manufacturer No. 3.)

Relative to the requirements of our industry for yarn of this description, we have on several occasions tried to interest mills here in manufacturing yarns of this kind, but without success. Since we have been in the business, we have never used an ounce of yarn for bobbin purposes except the imported, nor can we manufacture any goods in any way whatever without the use of this yarn. (Curtain Manufacturer No. 4.)

Brass-bobbin yarns are specially prepared and made from Egyptian cotton. They are not made and therefore can not be procured in this country, and as their use is absolutely necessary in the making of lace curtains we are obliged to import this class of yarns. (Curtain Manufacturer No. 5.)

During the years 1897 to 1904 we used a prepared yarn made by an American thread mill; this mill was eventually consolidated into a larger company when the manufacture of this special yarn was discontinued. Since 1904 we have never been able to find a yarn made in this country which in any way compared with the English brass-bobbin yarn. In fact, the yarn that was made by this local thread mill never was the equal of the English yarn, but we tried to develop it in this country and continued to give them business even though they were never able to finish it as it should be. The result was that the use of this yarn, assuming the price to be the same, cost us, according to our records, more than the English yarn.

After the war started in 1914 we were fearful that there might be a scarcity of brass-bobbin yarn, and we endeavored to find something to take its place in this country, but we found nothing that would do as well, in our judgment. I have no doubt that if trade was bad some American mill might learn now to make this yarn and develop it, but with trade as it has been for the last four years there has been comparatively little inducement, and I think it might be safe to say that this prepared yarn can not be had in the United States. None of the mills are able to make it to-day, at least no mill that we are able to find, and for this reason we feel that the duty on prepared yarn should be removed.

It is a serious handicap to us in competing with the English for South American and other foreign business in curtains, and when the war ends it will be very difficult for us to retain what little ground wo have gained unless every advantage of this kind is given us. The removal of the duty on this yarn would in no way affect the American spinner.

It would be pretty hard for me to give you an opinion as to the effect of the present tariff duties in our trade, as the new tariff did not go into effect until such a short time before the outbreak of the war. It was very difficult for us to compete with the English where the buyers were able to import in large quantities, for the tariff of 45 per cent on lace curtains did not cover the difference in the wages by a long way. This firm had some advantage, in that it sold all over the country, and our designing staff tried to tempt the buyers with new ideas which the English did not have, and the English could not travel all over the country, but until the present tariff is given a fair trial it would be very difficult to make any statement as to whether we could compete.

I understand that the basis of English wages has advanced fully as much, if not more, than ours. Their supplies will cost them more; their taxes will cost more, and their money will cost more, all things on which they had the advantage of us heretofore. My own opinion in the matter is, that you could at least give us the advantage of the prepared brass-bobbin yarn free of duty, for the yarn manufacturers in this country have been given every opportunity to make them, but have not tried to. It is all imported, and I see no reason for paying taxes on it. (Curtain Manufacturer No. 6.)

Prepared yarns.—Nearly all of the prepared yarns—sometimes called brass-bobbin yarns—that have been imported were for use on certain machines for the manufacture of lace window curtains, forming, however, but a small portion of the total weight of the curtain, the great body of the curtain being composed of medium and coarse yarns. This curtain manufacture is of comparatively recent origin in this country, and those engaged in the manufacture imported their brass-bobbin yarn from England where it has been used in the Nottingham district of that country for the same purpose. The American lace curtain manufacturer has always been prejudiced in favor of foreign yarns; and not disposed to encourage its manufacture here. The consumption, however, is not large and the duty under the present tariff is so low that yarns could be imported at a price below that which was sufficient to offer an inducement to the American spinner to make them. We made an attempt in one of our mills to make these yarns, but abandoned it because we could not make them profitably in competition with foreign yarns. We believe that prepared yarns are used only in the lace making industries. So far as we know they are not being made in this country at present.

As to the American industry being able to supply such yarns in the future, about which you inquire, we wish to say that the industry is able to supply all such yarns at short notice. There is no difficulty in producing the yarn; it resolves itself into a question of price and profit. With little inducement we would agree to equip a mill to make all that is required in this country.

Fine yarns required in the manufacture of laces are not made here for the following reasons: 1st. The fine lace industry in the United States is of very recent origin, is carried on on a very small scale, and we doubt whether it has yet been placed on a substantial footing. Therefore there has been no inducement in the way of demand for establishing the making of very fine yarns. 2d. They could be imported at a very much less price under the existing tariff laws than they could be made in this country at a profit. (Cotton Spinner No. 1.)

LACE YARNS.

The term "lace yarn" is often used in its general sense to cover all yarns used in the manufacture of lace, lace curtains, or plain net, and sometimes even to cover yarns of a similar character—smooth, tough, firm yarns specially made—used for other purposes. Specifically, however, lace yarn is used for making lace, and by lace is meant fancy lace, of which the machine variety is made on the Levers lace machine.

The Levers lace machine derives its name from John Levers, one of the principal originators. There are two types, the "Levers with lean bars" and the "Levers go-through." The latter type, which permits the chariots to go through the combs without the aid of landing bars, gives the largest production and, except for special work, is that generally adopted. Of 569 Levers lace machines in this country, according to a recent report, 512 were of the "go-through" type. Of the total, 224 were located in Rhode Island, 114 in Pennsylvania, 46 in New York, 43 in Connecticut, 32 in New Jersey, 27 in Illinois, and 26 in Ohio. A large proportion of these machines, though practically all of English manufacture, were entered free of duty during the period of August 5, 1909, to January 1, 1911. Paragraph 197 of the tariff act of 1909, which permitted the temporary free entry of these machines, laid the foundations for the development of the fancy lace industry in this country. Inferentially, the importation of Levers-lace yarns was very small before 1910.

The lace and the lace-curtain industries are more or less separate and distinct, using different machines to make articles that meet different classes of demand, and in studying imports of foreign yarns it is well to keep in mind their separate requirements.

The Levers lace machine, including the variation known as the Levers go-through, uses a wider range of yarns and makes a wider range of products than is possible on the lace-curtain machine. The lace-curtain machine uses very little yarn finer than 98/2; while the Levers lace machine uses the full range of yarns from the coarsest up to the very finest it is possible to spin. The finest yarn imported for this purpose is 260/2, but Calais and Nottingham lace makers use some as fine as 400/2. Normally the main lace-curtain yarns imported are 68/2, 58/2, 70/2, and 78/2, while the main Levers lace yarns imported are 140/2, 120/2, 98/2, and 78/2, each stated in order of relative importance.

The "point" of lace-curtain machines refers to the number of bobbins to the inch while the "point" of Levers lace machines refers to the number of bobbins to the half inch. The American Levers lace industry includes machines from 7 points up to 15 points inclusive; such machines have 14 to 30 bobbins to the inch and therefore make lace with 14 to 30 meshes, usually hexagonal, to the inch. The American fancy lace industry uses most largely the 9½ point machine, with 19 bobbins to the inch, as this size has proved best adapted for imitating the general run of handmade laces. We compete with England but have not been able to make a dent in the imports of Calais laces. Calais uses machines from 9 to as fine as 18 points and specializes on very fine yarn laces such as those of the Valenciennes, Malines, and Chantilly types. The war closed the finer and more profitable end of the lace industry, as the French, who are the recognized leaders in lace making, declared "style laces" for outer wear not in fashion. But for this fashion decree the American industry would have had a fine opportunity; as it is they have been confined more or less to their usual field of "staple laces" for underwear trimming.

To sum up the relative yarn spheres of the lace curtain and fancy lace industries, it may be said that lace curtains are usually made of yarns coarser than 100/2 and usually have less than 16 meshes to the inch, while fancy Levers laces are made most largely of yarns finer than 100/2 and usually have more than 16 meshes to the inch.

The Levers lace machine uses four kinds of yarn; brass-bobbin yarns, ground-warp yarns, outline yarns, and gimp yarns. The bobbin and ground-warp yarns are used to make the body of the lace while the outline yarns trace figures which are filled in by the gimp or fining yarns. The ground-warp yarns, outline yarns, and gimp yarns are all warp yarns and are carried on beams underneath the machine; they are drawn up vertically to intertwist with the brass-bobbin yarns which are suspended from the lace beam at the top and swing back and forth like pendulums.

There are various classes of lace, and the type of yarn used varies with the class of lace made. According to statements from lace makers the main laces manufactured in this country could be almost entirely included under (*a*) bobbin-fining laces, and (*b*) independent-beam laces, although these terms are not used in the selling of the lace. In making fine independent-beam laces, in many cases the same yarn is used for the beam or gimp yarn as is used for the warp yarn in the manufacture of bobbin-fining laces.

Lace-curtain yarns are used in the gray and are rarely required to be gassed. Levers lace yarns are usually gassed, and although mostly used in the gray, a portion is required either in the bleached state or dyed, and a fair amount is also mercerized. Most lace yarns are imported in cross-reeled skeins, put up in 10-pound bundles, and baled. A portion of the finer lace yarns, above 140/2, is imported in 2-pound packets and these are largely in the diamond or Grant reel skein. The Grant reel is a more costly method but it prevents waste in unwinding which is very important on high-priced yarns. For putting up in the diamond or Grant reel the English charge from sixpence to a shilling a pound extra.

Lace yarns are usually bought with "weavers' flat knots," with close-clipped ends, but a small amount of lace yarn is required without any knots at all. In the coarser yarns the knots would afford most obstruction and so we find 28/2, 30/3, and 38/2 knotless yarns imported to a small extent. Knotless yarns are joined by splicing, not by tying. Whenever an end breaks in the twisting or subsequent processes the operator removes both the winding-off bobbin and the winding-on bobbin and hands them to a special operator who, either by hand or with the assistance of a small machine, untwists the strands for a certain distance, overlaps the one with the other, and then twists them together (sometimes with the aid of mucilage) so as to make a continuous joint without any thick place. For special purposes fine lace yarns are sometimes required knotless but usually the 30/3 is the main count treated in this way for the American lace trade. One of the main uses of this coarse yarn is in making on Levers-lace machines imitations of torchons such as are made on braiding machines. Occasionally yarns made with flat, close-clipped weaver's knots are also, though incorrectly, termed "knotless."

Brass-bobbin yarns for laces.—Brass-bobbin yarns represent the very highest perfection in cotton yarn manufacture and are so difficult to make satisfactorily that they remain the specialized production of a very limited number of British spinners and doublers. Brass-bobbin yarns for lace work attain a degree of fineness never used in lace-curtain work, in fact the finest brass-bobbin yarns require the best cotton grown and are the most costly of all yarns.

As in the case of curtain work, the brass-bobbin yarn is wound in a groove around the circumference of a minutely thin brass bobbin formed of two discs of hard-rolled brass which are fastened together with numerous small rivets. The groove between the two discs is intended to permit the passage of but one end of yarn, and this is superimposed in one continuous concentric layer. Some of these brass bobbins are so thin that the two discs or flanges with the yarn inside will not measure more than one-fiftieth of an inch. In order to get as many yards as possible on each bobbin the yarn is always, or almost always, prepared by being passed in the hank between the rollers of a special yarn-preparing machine. This calendering process polishes the yarn, flattens it from a round to an oblate shape, and renders it more flexible. No prepared yarn is made in this country so the Levers lace industry, like the lace-curtain industry, is absolutely dependent on English bobbin yarn for its operation. This yarn is known as gassed prepared or plain prepared according to the use or omission of the gassing process; for lace work it is usually gassed. A manufacturer of laces reports:

> It has always been considered by the lace trade that a prepared yarn was absolutely necessary for use as a bobbin yarn. There is no doubt that a prepared yarn gives much greater yardage on the bobbins, and is better adapted for the work. However, up to 60/2 an unprepared yarn can be substituted if it is of high grade. A percentage of the 58/2 grey carded that we import is used for this purpose without preparing. This substitution of unprepared yarn for bobbin work can only be successfully undertaken if the bobbin is dished.

Each point machine has a range of brass-bobbin yarns which can be used and which varies slightly in each mill, according to the opinion of the management as to which counts give the best results. The following tabulation illustrates the usual practice, and also shows the yardage that can be wound on each bobbin.

	Count of prepared brass-bobbin yarns.	Yards on each bobbin.
Levers-lace machines:		
7-point	78/2 or 98/2	100–125
8-point	98/2 or 120/2	100–115
9-point	120/2 or 140/2	90–105
10-point	140/2, 160/2, or 180/2	85–100
12-point	160/2, 180/2, or 200/2	75–90
14-point	180/2, 200/2, or 220/2	70–80
15-point	200/2, 220/2, or 260/2	70–75

There are only a few of the 15-point machines in this country; these are all in one plant and stood idle during the latter part of the war. After the British, in 1917, prohibited the export of yarns of sea-island cotton, the finest counts obtainable were 180/2, which about marks the limit of fineness attainable by the Egyptian Sakelaridis in substituting for the longer stapled material. Normally brass-bobbin yarns are made of Egyptian up to 120/2 or 140/2 and the finer counts are of sea island exclusively.

Brass-bobbin yarns are required to have a greater breaking strength than the warp yarns. Well made lace shows accurately formed hexagonal meshes of uniform size and to attain this result it has to be made under considerable tension. Bobbin yarn is not only subjected to strain on the machine, but also before manufacture, as the preparatory process of winding on to the brass bobbins is one of continuous and heavy tension. Brass-bobbin yarns for lacework, however, need not be as strong as similar yarns on machines making the heavier curtains. For instance 78/2 brass-bobbin yarn with a breaking strength of 95 to 100 pounds would be required for curtains while 85 pounds would be acceptable for Levers lacework. Similarly 98/2 brass-bobbin yarn for curtain work must have a breaking strength of 85 to 87 pounds but for Levers lacework 75 pounds would be sufficient. The 120/2 for lacework should show a breaking strength of 67 pounds.

Lace yarns up to 78/2 are always carded, 160/2 and above are always combed, leaving three counts—98/2, 120/2, and 140/2—which may be either carded or combed, though as a rule most of the two last named are combed. The 260/2 is usually double combed. In some cases, where exceptionally perfect yarns are required, double combing is used for yarns as coarse as 120/2 although this is costly since only about 60 pounds of yarn is obtained from 100 pounds of high-priced cotton.

Brass-bobbin yarns for lacework are usually 2-ply, though for special work some is occasionally in the single or in 3-ply. Brass-bobbin yarns under 60/2 are usually ring twisted; between 60/2 and 120/2 they may be either ring or flyer twisted; but for the extra fine range beyond 120/2 flyer twisters are essential for perfect work. On the finest yarns very slow speeds are essential and the positive action of the flyer twister and the lesser atmospheric resistance make a more perfect thread. Flyer twisters are not used in the United States for doubling fine yarns and this is said to be one of the main reasons why attempts to make acceptable lace yarns in this country have never succeeded. As one English authority remarks, "The introduction of a flyer system of doubling indicates a limit in speed and production, and this limitation is the keynote to the making of a perfect brass-bobbin thread." In the lower grades, up to 60/2, price will not permit any serious limitation in the speed and the ring twister is customary, but in the twisting of the finer threads above 120/2 "slow speeds are highly essential, and the positive action of the flyer twisting is imperative in this delicate work." The leading British doublers supplying 2-ply lace yarns for the American market produce entirely flyer-doubled yarns.

Lace yarns must be regular and uniform in character, strength, and elasticity. The single yarn must be spun with care from selected long-staple cotton, the ordinary supercarded qualities being spun with ordinary "doubling weft" twist, while the higher counts contain less twist owing, in part, to the longer staple. The manufacture of a perfect lace yarn, however, really depends on the doubler who, in England, usually buys his single yarn and confines himself to the doubling and subsequent gassing, preparing, or other special processing. The doubling and preparing of yarn for lacework require skilled help and expert management. The number of firms that have succeeded in making these yarns satisfactorily is small and those entering the extreme fine range of 220/2 to 400/2 can be numbered on the fingers.

Double-spun lace yarns.—The most important of the single yarns imported for lacework is the "1/70 gray combed Sakel gassed prepared D. S." The so-called double-spun or D. S. yarns are double-twisted combed single yarns that are made for use in certain classes of lacework as a cheaper substitute for regular 2-ply lace yarns. The term "spun" is here used, as in the silk industry, in its primary sense of "twisted."

Most of the double-spun yarns imported are of 70/1, the import of all other yarns of this character being very small. In making 70/1 D. S. from combed Egyptian or sea island, the yarn is first spun on the mule with a twist of about 23 turns to the inch. This yarn is then put on a wet twister and 19 turns additional twist inserted, without any doubling, so that the finished single yarn shows 42 turns twist to the inch. This is the same twist as that of the 140/2 for which this special twisted yarn is substituted. Both the first and second twists are inserted in the same direction. The 70/1, of course, measures the same number of yards to the pound as 140/2, and as it is given the same twist, in the manner stated, and is then gassed and prepared, it has much the same appearance and it is not greatly inferior in strength.

It is possible, as in crêpe yarns for instance, to make high-twisted yarns on the spinning frame alone, but yarn so made can not compare in evenness, strength, or elasticity with that spun under ordinary conditions and then specially twisted to increase the turns per inch.

The imports of double-spun single yarns declined from a total of 198,301 pounds in 1914 to a total of 44,427 pounds in 1918, but irrespective of the war their use was tending to decline. Single yarns have not proved very successful in lace machines in this country, whether on bobbins, warps, or beams, as they tend to reduce the production of the machine, a defect which is more serious here than abroad owing to our higher wage scale.

Lace warp yarns.—The warp yarns imported for lacework range from 30/2 to 200/2 or almost the full range of counts of the brass-bobbin yarns with which they are intertwisted in making the six-sided meshes of the groundwork. The greater part of those up to 140/2 are carded, either ordinary or supercarded; higher counts are necessarily combed. Lace warp yarns are usually gassed and cleared.

In making bobbin-fining lace, each machine requires at least two warps, one of which is of right-twist, and the other of left-twist (reverse-twist) yarns. Both warp yarns are made from Egyptian or sea-island cotton and of a special strength, the only difference between them and the brass-bobbin yarns being that the warp yarn is not ordinarily prepared and is not necessarily so strong or elastic. Practically all of this yarn is made in England, and most of the domestic manufacturers use the same stock as that used in the brass-bobbins, where the same count is required, as they consider it impracticable to carry two stocks and there is very little difference in the price. The reverse-twist yarns are purchased for warps only, and the cost is practically the same as the cost of the same counts of brass-bobbin yarns. The warp yarns are usually slightly coarser than the brass-bobbin yarns, for instance, a 9½-point bobbin-fining machine may be using 140/2 in the brass bobbins and 120/2 reverse in one warp and 98/2 right twist in the other warp. Invoices frequently read "gray combed gassed stained reverse," which indicates that this yarn has been colored with a light fugitive dye to insure its differentiation from the warp yarns with right-hand twist; the dye is washed off in the subsequent finishing operation, after the lace is made.

Lace outline yarns.—These yarns, which the French call "brodeurs," are usually much heavier than the other lace yarns, so as to give a contrast in outlining the figures. The main counts are 30/3, 40/3, and 60/3. These yarns are not, as a rule, gassed. About one-half of the domestic lace mills use imported yarns, usually twiner-twisted carded Egyptian; the others use a high-grade combed Peeler domestic yarn, which must be made in a mill whose employees have been trained to tie flat knots and to clip the ends of such knots very close. A leading lace manufacturer reports:

> There is very little in favor of using the domestic yarn, except that the supply is assured; as while the cost is slightly less, the slight reduction which they cause in the productive power of the machine offsets the same.

Lace gimp yarns.—Gimp yarns, known in the French industry as "guimpes," are used to fill in the designs traced by the outline yarns. They vary in count from 10/2 to as fine as 160/2 and can be divided into two classes. The first includes yarns from 10/2 to 80/2, inclusive; about one-half of the domestic lace mills use imported yarns and the others use domestic Peeler yarns with flat knots and a high breaking strength. The second class is made up of yarns above 80/2, and all of these are imported and are usually prepared yarns.

Imports of Levers lace yarns, by counts and sources (in pounds).

	1914	1918
Prepared (count):		
30/3	8,100	....
38/1	19,100	1,406
40/1	15,000	....
58/2	....	53,848
68/2	....	5,961
70/1	151,233	54,788
78/2	68,889	74,275
78/3	671	4,997
90/1	2,411	5,101
95/2	....	5,500
98/2	99,893	97,558
100/2	20,997	....
112/2	....	13,050
120/2	119,967	101,163
135/2	5,560	....
140/2	186,507	282,356
150/2	9,856	4,210
160/2	26,990	18,921
180/2	50,157	18,638
190/2	5,580	....
195/2	....	1,040
200/2	13,588	4,960
220/2	9,782	1,540
260/2	3,134	....
Others	20,578	8,609
Total	873,993	757,921
Not prepared (count):		
30/3	2,800	15,440
59/2	6,773	....
70/1	18,140	....
78/2	41,899	8,000
98/2	26,657	10,749
100/2	21,478	....
120/2	60,225	6,724
140/2	38,002	16,026
160/2	6,025	....
180/2	10,324	....
200/2	4,460	....
Other	21,161	1,906
Total	257,944	58,845
Total invoiced from:		
Nottingham	476,284	238,497
Manchester	437,518	464,829
Macclesfield	53,820	39,581
Stockport	40,872	1,406
Mansfield	29,996	68,953
Oldham	26,814	....
Bollington	12,098	3,500
Settle	9,099	....
Bolton	8,700	....
Bradford	736	....
Total	1,095,937	816,766

The foregoing tables show that the imports of Levers-lace yarns, so far as shown by the available invoices, totaled 1,095,937 pounds in 1914 and 816,766 pounds in 1918. The main counts imported in 1914 were 140/2 (with a total of 224,509 pounds), 120/2, 70/1, 98/2, 78/2, 180/2, and 58/2; the main counts imported in 1918 were 140/2 (with a total of 298,382 pounds), 98/2, 120/2, 78/2, 58/2, and 70/1, in the order named. During the war there has, of course, been a decrease in the number of variations of counts and plies imported; there has also been an increase in the import of 140/2 and a corresponding decrease of the 70/1 D. S., which is used as a substitute.

The decrease in imports of lace yarns, as distributed between the prepared and unprepared yarns, was relatively much greater in the unprepared yarns, which declined to less than 60,000 pounds. This was naturally to be expected during war time when the range of unprepared yarns up to 98/2 could be supplied more readily locally, even though lace makers may differ as to their entire suitability. While extreme high ranges were difficult to get from abroad, they were also not so much in demand. The decrease in the import of prepared yarns indicates a decrease in the output of laces, since these yarns are all obtained from abroad and no satisfactory substitute has been developed in this country.

Imports of Levers-lace yarns are supplied exclusively by England, the main points of origin being Nottingham and Manchester. Smaller contributions come from other places, such as Mansfield, Macclesfield, Stockport, Oldham, and Settle. Most of the mills engaged in the manufacture of lace yarns are owned by The Fine Cotton Spinners' & Doublers' Association, which has its headquarters at Manchester.

The import trade in Levers-lace yarns differs from that in the lace-curtain yarns. As has been shown, most of the trade in lace-curtain yarns is supplied by one doubler and consists almost entirely of direct shipments to 10 mills. The Levers lace trade is distributed among a much larger number of exporters and importers, and most of the latter are yarn importers who order for the lace mills. In 1914 there were 31 exporters and 28 importers, the largest amount exported by any one firm being 230,785 pounds and the largest amount imported by any one firm being 210,678 pounds. In 1918 there were 19 exporters and 16 importers, the largest amount shipped by any one firm being 207,458 pounds and the largest amount imported by any one firm being 164,827 pounds.

Statements by the trade.—The following statements by Levers-lace manufacturers indicate the opinion of leaders of the industry as to the necessity for the import of Levers-lace yarns:

> The requirements of foreign yarn for the lace trade are such that, in the writer's opinion, if imports of yarn were to cease, the lace-curtain and Levers lace industries must cease also. The greatest demand in the lace-curtain trade at the present time is for a finer class of goods, such as 10, 12, 14, and 16 point. All of these must have imported brass-bobbin yarns to be successfully made; 6 and 8 point might be made of all domestic yarns if dished bobbins were used. Unfortunately, however, dished bobbins are not so satisfactory as those generally known as solid or flat bobbins and which are generally in use in America. The Levers trade, using generally finer yarns than the lace trade, would be forced out of business if they could not procure imported yarns.

As to tariff duties, we have never seen that foreign lace yarns are in any way in competition with domestic spinning. We know of no spinner in the United States who can or will produce a yarn which can be used as a brass-bobbin yarn in fine machines. The experiment has been tried in this country, and we some time ago purchased yarn to be used in brass bobbins, and it was so much inferior to the imported that we discontinued its use. We feel that a duty on foreign lace yarns should be for revenue only, as a high tariff will in no way protect domestic spinners of cotton yarn. (Levers-lace Manufacturer No. 1.)

It is practically impossible to obtain gassed prepared yarns in this country; in fact, there is no domestic supply of the so-called lace yarns, meaning gassed prepared yarn with an extra amount of twist.

The finer counts from 140/2 up are not produced in this country at all and the tariff thereon protects no industry, as there is none. We consider that we are penalized by the tariff on these fine numbers in competition with laces imported from France and England in that there is no domestic industry in these yarns from which we can stimulate competition with the English manufacturers.

The Levers lace business in the United States has not been a success to date, as the differential in duty between the raw material and the finished product is not sufficient to allow us to compete favorably with the goods imported from France and England, and we believe that removal of the tariff on these fine numbers would help us considerably and would certainly do no harm, as there is no fine yarn of this description manufactured in the United States. (Levers-lace Manufacturer No. 2.)

In these fine-count yarns it is necessary to have them gassed and prepared in order to work well in the lace machines, and it is absolutely necessary to purchase them in foreign countries, as up to the present time none of the spinners in this country have, as we know, any plant for gassing and preparing yarn.

Previous to the war the domestic lace industry had been laboring under great difficulties in endeavoring to compete with goods imported from foreign countries and also to a large extent due to the insufficient rate of duty imposed upon manufactured laces imported into this country. (Levers-lace Manufacturer No. 3.)

BOBBINET YARNS.

The manufacture of machine-made laces, using the word "laces" in its larger generic sense, may be divided into the three classes of Levers fancy laces, lace curtains, and plain net, each of which is made on a special machine.

Plain net may be either bobbinet (also spelled "bobbinette" and "bobbin net") or square-mesh mosquito netting. Bobbinet is made on a band circular machine which may be either "double locker" or "rolling locker" according to whether one or two rows of bobbins are employed. The two rows of combs or grooved bars in which the chariots slide are moveable so that each chariot with its bobbin thread is, as it continues to swing back and forth and intertwist with the warp threads, gradually shifted from one end of the machine to the other and then back again. Machines for making square tulle or mosquito net are a variation of such machines, as the combs are stationary; there is only one set of bobbins.

It should be noted that the lace-curtain industry makes a large amount of net curtains and that during the war it has made for the Government a large amount of mosquito netting. Square-mesh mosquito netting can not be made on the lace-curtain machines, but under the stress of the war emergency the lace-curtain mills found that they could make a very acceptable substitute by employing the triangular curtain mesh to which the industry was accustomed, and using 18 warp and 10 bobbin threads to the square inch. This matter is referred to here because this substitute mosquito netting, as well as the regular square-mesh mosquito netting, is sometimes incorrectly referred to as "bobbinet," whereas true bobbinet is made with the hexagonal mesh only.

The bobbinet industry in the United States is very small, there being only two main manufacturers and a total in 1918 of only 39 machines. The bobbinet produced is used for veils and other wearing apparel. The total yarn requirements of this industry are not large and are supplied locally; there are only occasional small imports of yarns for special purposes. So far as recorded on available invoices imports of bobbinet yarns in 1914 and 1918 were as follows:

Yarn count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
40/1		583	Nottingham	7,410	
50/1		300	Derby		783
58/1		731	Mansfield		731
160/2	1,210		Manchester		300
200/2	6,000				
220/2	200				
Total	7,410	1,614	Total	7,410	1,614

All of the above imports were combed yarns, gassed and prepared, used for bobbin work.

Having seen the foregoing, the leading bobbinet manufacturer writes:

> In reply to your inquiry as to why the imports of fine yarns have been discontinued, we beg to say that the domestic industry can not compete on laces or bobbin nets made with fine yarns and for this reason is compelled to make only goods for which coarse yarns are used.

VOILE WEAVING YARNS.

Voile yarns are extra hard twisted and the two-fold is twisted in the same direction as are the single yarns of which it is composed. This is known in the trade as "T on T" or twist on twist. The effect of the second twist in increasing the single twist is to make a smooth, hard, wiry yarn with special elastic properties. The finished or two-fold twist on imported voile yarns is usually 38 to 40 turns per inch for Nos. 96/2 to 100/2 and about 47 turns for No. 140/2.

Voile yarns cost considerably more to produce than ordinary ply yarns of the same counts, largely because the extra twist not only reduces the production but the one-way twisting creates such a tendency to snarl that every inch of the yarn must be kept under excessive tension during the spinning, doubling, clearing, gassing, and winding. At the twisting frame a roller, wet with a good conditioning solution, helps to render the fibers supple and to fix the twist until the yarn can be woven.

The import of voile yarns is confined to a few counts. In 1914 the import was 30,439 pounds of 96/2, 17,819 pounds of 100/2, and 105 pounds of 180/2, a total of 48,363 pounds. In 1918 this was increased to a total of 278,532 pounds, of which 156,868 were 96/2, 34,051 were 98/2, and 87,613 were 140/2. These yarns were entirely gray combed, and almost entirely gassed Egyptian.

There is a fairly large import, in normal times, of voile cloths for women's dresses and for use in the manufacture of "novelty" curtains. Voiles are made in this country from single yarns ("single voiles"), or from two-ply yarns ("two-ply voiles"), or from a combination of single warp and two-ply filling. The two-ply is the original true voile and the others are cheaper substitutes. Imports are confined almost entirely to the higher grade of two-ply voile cloths and such voiles encounter strong competition here only from cloths woven from imported yarns. Any increase in the import of these voile yarns, such as occurred between 1914 and 1918, implies stronger domestic competition with imports of voile cloths.

The imported voile yarns are used in the manufacture of 40-inch voile cloths averaging around 10 yards to the pound. The 140/2 is mainly for use as both warp and filling in 64 by 64 pick goods; the 96/2 to 100/2 are mainly used as both warp and filling in making 62 by 56 pick goods, though some of them are for filling in combination with 50/1 domestic warp to make a cheaper grade. It is admitted by most of the importers of voile cloths that the domestic goods made from imported yarns are not only better woven, but that they are usually cheaper than the imported.

The following statement from an American firm that imports 2-ply voile yarns and weaves here is significant of the necessity for the importation of such yarns and of the results attained thereby:

> We import about two-thirds of the voile yarns from abroad which are woven into fabric in the United States. Regarding tariff and the rates of duty, I would say that it is not a question of protecting the weaver, as the weaving of this fabric is handled better in the United States than in foreign countries, but it is for the protection of the spinner, as we can not produce the fine yarns which are required. Therefore, if a duty was to be put upon yarns to be the same ratio as the duty levied on the cloth made from these yarns, we would still import yarns and not cloth. There are no domestic yarns to compete with imported voile yarns; therefore we select the best imported yarns and make them into cloth. I find that the English are better spinners

and the Americans better weavers. The domestic voile made from imported gray yarns and woven in the United States is the best combination to be had. The English produce a better finish on the cloth than the American finishes. Nine-tenths of the voile business, however, is done in fabrics of simple finishes, which the United States can produce, and as we make a superior cloth I believe that in the future it will be hard for foreign manufacturers to compete.

Another manufacturing importer stated:

> In nearly all of the cotton voiles made by our mills very hard twisted single yarns were used, the twist being as high as seven or eight times the square root of the number. There is a limit, however, to the count or number of yarn which can be woven in the single; and the goods made from such yarns are not quite so handsome as goods made of a 2-ply yarn. Single yarns can not well be gassed; therefore the 2-ply gassed yarn was imported to make a special grade of goods. There is no difficulty in making these ply yarns in this country, but when the yarn is required for a special purpose, and only in moderate quantity, it is not always to the advantage of the spinner to make it. Then, again, the low rate of duty imposed upon cotton yarns by the present tariff act has militated against the manufacture of yarns of this character in our country, because they could be imported at a less price than they could be made here with profit.

Voile cloths, whether the plain voile ground extends all over or is broken by fancy stripes or cords, are dependent on fashion, so that imports of the fabric, and of yarns therefor, fluctuate somewhat widely from year to year; but the American manufacturer controls the market for single voiles and with the aid of imported voile yarns is getting an increased control over the trade in fine 2-ply voile cloths.

The voile yarns imported in 1914 were invoiced from Manchester and Bolton, whereas those imported in 1918 were invoiced from Nottingham, Bolton, and Manchester in the order named. These special yarns were produced almost entirely by four British doublers; most of them were imported by one cotton mill and the remainder chiefly by one yarn importer. Those for use as filling were imported mostly on through-tube cops which were sometimes listed as pirns or bobbins; those for warp were imported mostly on tubes, sometimes listed as cheeses. It is to be noted that in 1918, 96/2 voile yarn invoiced at 3½d. to 4½d. per pound higher when put up on pirns than when put up on tubes.

CRÊPE WEAVING YARNS.

Imports of crêpe yarns are so small that they would not be stated separately from other weaving yarns were it not for the fact that they are a specialty. Crêpe yarns employed as filling in weaving crêpe fabrics are excessively hard twisted, in fact made with about double the amount of twist inserted in ordinary warp yarns. When woven into a fabric the contraction exercised by this excessive twist gives the fabric the characteristic crêpe effect.

Of the 1914 imports, amounting to only 14,921 pounds, the main items were 7,230 pounds of 30/2, 4,892 pounds of 48/1, and 1,243 pounds of 180/2. Total imports in 1918 amounted to only 1,633 pounds, and included four counts—8/1, 150/2, 160/2, and 180/2. Part of the 1914 imports were dyed, but all of the 1918 imports were in the gray. The lower counts were partly carded and partly combed; the higher counts were combed. Some were made with reverse twist. Egyptian cotton was used most largely, though part of the coarser counts were made of American cotton; sea-island was used for the finest.

Contrasting 1914 and 1918 we find that No. 180/2 was apparently the only count imported in both years. This yarn, invoiced as "2/180 gassed S. I. crêpe 75 turns combed gray on tubes," was listed at 94d. in 1914, and at 165d. in 1918, though the amounts are so small that such a price contrast is only an indication. In 1914 the 30/2 crêpe yarn from France invoiced at 6½ francs a kilogram, or 57 cents a pound, while the 48/1 and 50/1 invoiced at 8½ francs a kilogram, or 75 cents a pound.

Of the 1914 imports 11,581 pounds were from Lyons, 2,061 pounds from Rorschach, and 1,279 pounds from Nottingham. Of the 1918 imports Manchester supplied 1,500 pounds and Nottingham 133 pounds.

TURKEY-RED YARN FOR TOWELS.

The domestic market for cotton towels is controlled by American manufacturers, but in order to maintain their hold they have had to import the Turkey-red yarns that are required for border stripes and for monogram and name work. They have never been able to obtain fast red yarns in this country.

There are two European localities famed for the excellence of their Turkey-red dyeing, namely, the Wupper Valley in Rhenish Prussia, of which Barmen is the export center, and the district around Glasgow in Scotland. Before the war American towel manufacturers depended for their red yarns almost entirely on Barmen; in 1918 imports originated almost entirely at Glasgow, but owing to war disturbances a normal supply could not be obtained.

Imports of Turkey-red yarns for towel work are all coarse counts, of 20s and under, partly of 2-ply yarns and partly of single yarns interchangeable therewith; for instance, a towel manufacturer may substitute No. 10/1 for the more expensive No. 20/2. These coarse yarns are made of American cotton and are carded only; they are not imported because of either price or yarn quality, but solely because of their fast color.

Imports of Turkey-red yarns amounted to 202,879 pounds in 1914 and to 63,950 pounds in 1918. Of the 1914 imports the main count was 6/1, with 67,455 pounds, followed by 20/2 with 36,657 pounds, 12/1 with 31,319 pounds, and then by 14/1, 10/1, 14/2, and 8/1. Of the 1918 imports, 51,500 pounds were of 20/2 and 4,000 pounds of 6/1, leaving very little to be distributed among other counts.

Imports of Turkey-red yarns are partly in the skein and partly on 1-pound cheeses or tubes; each bale usually contains 40 or 50 paper-covered bundles. Normally, a bundle of yarn is supposed to weigh 10 pounds, but the Turkey-red yarns from Germany were noted on invoices as weighing between 10 pounds 4 ounces and 11 pounds 4 ounces. The extra weight above the 10 pounds represents the weight added in dyeing.

Imports of Turkey-red yarns for towels, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
6/1	67,455	4,000	Barmen	200,172	....
8/1	10,553	1,500	Glasgow	900	58,500
10/1	15,873	....	Manchester	807	5,450
12/1	31,319	1,500	Other	1,000	....
14/1	19,942	1,000			
20/2	36,657	51,500			
Other	21,080	4,450			
Total	202,879	63,950	Total	202,879	63,950

Statements by the trade.—The following statements are given as indicative of the opinion prevalent in the trade as to the necessity for the import of Turkey-red yarns. The largest towel manufacturer states:

> We have never been able to find a domestic Turkey-red yarn that will stand the caustic bleach which we have to give our towels, and this is the only reason we purchase the imported yarns; and for this reason we do not consider the domestic yarns at all. We understand that an American dye firm is now working on this, and we hope that they are successful in producing a color that will stand the caustic bleach.

The second largest American towel manufacturer added his corroboration:

> We have never been able to obtain any satisfactory Turkey-red yarn dyed in this country.

A large finishing plant which specializes in dyeing and bleaching cotton yarns reported in September 1918:

> To the best of our knowledge there is no Turkey red being dyed in this country at the present time, and even before the war there were only one or two concerns dyeing a shade which was comparable in fastness to the imported article. The term "Turkey red" should be applied only to the shade produced by the dyeing of alizarine on an aluminum mordant and processed in such a way that the resultant color is fast to a caustic kier boil. The term has, however, been applied rather loosely to an "alizarine red" which is chemically the same but due to differences in the mordanting and dyeing operations is not as fast and will not stand a caustic boil. As far as we know, there is no alizarine red of any description being dyed in this country, owing to the fact that alizarine disappeared from the market soon after the war broke out and none has been imported or manufactured in this country since that time.

MISCELLANEOUS COTTON-WEAVING YARNS.

The imports of voile yarns, crêpe yarns, and Turkey-red yarns for towels have been analyzed in preceding pages. In addition to these specialties the American cotton weaving industry uses a certain amount of imported yarns of a more general character; the proportion of these used in the manufacture of any specific cloth is, necessarily, not capable of being defined so precisely. The total, however, amounted to 388,789 pounds in 1914 and declined to 92,487 pounds in 1918.

In 1914 the leading count imported was 39/2 with 130,671 pounds; this was followed by 78/2 with 101,917 pounds, 38/2 with 56,494 pounds, and 120/2 with 24,838 pounds. In 1918 the main count was 78/2 with 25,567 pounds, followed by 64/1 with 16,252 pounds, 98/2 with 14,302 pounds, and 66/1 with 10,813 pounds.

Of the 1918 imports it is possible to state that the 64/1 and the 66/1 were for balloon cloths, that there were small amounts of 78/3 and 76/3 for airplane and balloon cloths, and that some of the 78/2 were for weaving venetians.

These English weaving yarns were usually classed as carded or supercarded up to 78s; above 78s they were mainly combed, though some of them were invoiced as supercarded. Most of these yarns imported in 1914 were carded whereas in 1918 combed yarns predominated, because the excessive prices prevailing in 1918 permitted the import of only the finer yarns for which it was more difficult to find satisfactory substitutes. Imports are normally almost entirely in the gray and the amount of dyed yarn is inconsiderable. No particular finish was required for most of these yarns. A portion, amounting to about a third in 1914 and less in 1918, was ordered gassed; the amount mercerized before import was very small.

Imported yarns are preferred to the domestic in the making of certain kinds of cotton cloths because of the quality of the material, method of manufacture, or finish, rather than because of their lower price, though the price may in normal times account for a minor portion of the total. Imported yarns are used also to some extent in weaving fabrics to compete with special goods, such as venetians and marquisettes, imported from England. Yarn imports in this line are normally almost entirely 2-ply, and it is said that the British doubler turns out ply yarns that are more evenly twisted and therefore rounder and more lustrous than can be purchased locally. Weaving yarns of Egyptian cotton are not made for sale in this country to any extent, and this fact alone accounts for part of the imports. Some of these yarns are gassed for use in that condition, but a small portion of the gassed yarns are mercerized after import.

The fact that gassing is cheaper abroad and mercerization cheaper in the United States accounts for the smallness of the imports of mercerized yarns; fine weaving mills which may require some foreign yarns have either their own mercerization plants or established arrangements for mercerization to be done on commission.

Imports of miscellaneous cotton weaving yarns, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
38/1		10,000	Manchester	323,491	47,355
38/2	56,494		Bradford	39,192	3,307
39/2	130,671		Crefeld	19,373	
48/2	9,977		Nottingham	3,852	27,460
60/2	12,739		Oldham		10,000
64/1		16,252	Other	2,881	4,365
66/1		10,813			
75/2	7,562				
78/2	101,917	25,567			
98/2	17,168	14,302			
100/2	6,691				
120/2	24,838	8,793			
Other	20,732	6,760			
Total	388,789	92,487	Total	388,789	92,487

WEAVING YARNS FOR MIXED SILKS.

Of the total imports of weaving yarns the largest item is that of yarns for use in making mixed-silk goods. In most such goods the warp is of silk and the filling of cotton. There is a steadily increasing manufacture in the United States of mixed-silk goods; in 1914 the census showed that the silk industry as a whole used about 1 pound of cotton yarn to every 2 pounds of silk, and that in addition the cotton mills were becoming large competitors in the manufacture of cotton-back satins and dominated the trade in many lines of silk-and-cotton fancies.

In 1914 the total import, so far as ascertainable from invoices, amounted to 653,679 pounds, of which 207,195 pounds consisted of 78/2, 123,919 pounds of 16/1, 50,894 pounds of 50/1, 40,806 pounds of 120/2, and 28,487 pounds of 98/2. In 1918 the total amounted to 304,647 pounds, of which 103,093 pounds consisted of 120/2, 42,404 pounds of 98/2, and 32,100 pounds of 115/2. In 1914 these yarns were chiefly under 78s whereas in 1918 they were mostly above 78s.

Yarns for making broad silks of silk and cotton were chiefly 2-ply yarns for use in women's dress goods, men's necktie goods, slipper satin, and the like, including some fancy cloths. In most instances the warp was of silk and the filling was of cotton, though the tie silks were mostly silk filled, the warp being of cotton and the filling of silk or of artificial silk. These yarns were for the most part rather soft twist; for instance 78/2 combed gassed mercerized skeins were usually made with 22/24 turns twist, which is between mercerizing twist and medium twist and which compares with 30 turns usual twist for ordinary cotton weaving.

In 1914 there was included in the total an import of 245,763 pounds of single yarns, but in 1918 this had declined to only 8,872 pounds of single yarns. The almost complete cessation of imports of single yarns accounts for most of the decline noted in the import of cotton yarns for making broad silks. The majority of the imports of single counts were listed as "gray combed Egyptian pincops." Some were made of American cotton; most of the small import from France, for instance, was invoiced as "fils de coton d'Amerique peignée." The fact that these imports were on pincops shows that they were imported for use in shuttles, as filling. As stated above, the main count in 1914 was 16/1; others, in the order named, were 36/1, 39/1, 20/1, 30/1, 24/1, 40/1, 49/1, and 50/1. In 1918 the import of such yarns was confined to 40/1, 36/1, and 50/1. The coarse counts imported in 1914 were used in making various kinds of silk mixtures, largely in the manufacture of cotton-back satins. In normal times yarns finer than 30/1 were in the main used for making union taffeta umbrella cloth, and all of those imported in 1918 were so used.

One of the largest manufacturers of umbrella cloths states that previous to the war he imported from 50,000 to 75,000 pounds a year of the three counts, 36/1, 40/1, and 50/1; part of the 36/1, the leading count, being carded and part combed while the 40/1 and 50/1 were always combed. The war dislocated his purchasing arrangements so that in 1915 he imported only 19,855 pounds; in 1916 he obtained 97,419 pounds, which dropped to 27,120 pounds in 1917, whereas in 1918 he found foreign prices relatively so high that he ceased buying abroad. He states:

> For your guidance we may say that for the past 10 years we have never ceased trying to induce domestic spinners to duplicate foregin spinning, but for some reason or other they were not able to make a yarn equal to the foreign yarn. However, we are glad to say that we are able to obtain now domestic yarns which under present conditions, at least, can be used as a substitute; and we hope that some day the yarns turned out will prove to be equal to the foreign-spun yarn. Of course, if this hope will not be realized, we will have to import this yarn again, in order to be able to compete against imported merchandise; and, as you know, this merchandise was always imported at extremely low figures.

Single and 2-ply imported for weaving mixed-silk goods were generally combed, and the proportion of carded yarns was much less in 1918 than in 1914. Almost all of the 1918 imports were in the gray but in 1914 there was a small import of dyed yarns. Most of the cotton yarns imported for silk weaving were gassed or mercerized, or were subjected to both finishing processes.

Imports of weaving yarns for mixed silks, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
16/1	123,919	....	Manchester	289,633	203,562
20/1	13,624	....	Bradford	91,960	....
24/1	5,805	....	Baar	65,561	....
30/1	10,047	....	Bolton	61,714	8,872
36/1	50,894	2,384	Ziegelbrucke	52,809	....
36/2	17,841	....	Crefeld	31,428	....
39/1	16,851	....	St. Tugbert	15,069	....
39/2	14,670	....	Gebweiler	14,755	....
49/1	5,587	4,328	Valserine	12,746	....
48/2	9,850	4,283	Colmar	6,762	....
50/2	5,131	....	Macclesfield	599	43,092
58/2	207,195	8,808	Stockport	....	38,876
60/2	7 716	....	Nottingham	116	10,245
70/2	14,922	....	Other	10,527	....
76/2	....	8,459			
78/2	18,390	34,616			
96/2	1,173	19,943			
98/2	28,487	42,404			
110/2	12,149	5,819			
115/2	6,144	32,100			
117/2	2,320	26,515			
120/2	40,806	103,093			
Other	40,158	11,895			
Total	653,679	304,647	Total	653,679	304,647

WEAVING YARNS FOR SILK VELVETS.

Silk velvets are generally made with a spun-silk pile and a cotton ground or back. The cotton yarns used for this purpose in largest amounts are 60/2, 80/2, and 100/2. Formerly these were almost entirely imported, but about 1914 American spinning mills, especially southern mills, began to improve and to increase their output of 60/2. It is stated by velvet manufacturers that the cessation of imports of this count was only hastened by the war as the southern yarns would in any event have supplanted the imported. Some manufacturers state that 60/2 southern Peeler yarns are better quality than imported 60/2 Egyptian. The 78/2, the main count imported for velvet backs, also encounters strong competition from domestic yarns. The small amount of finer yarns used are mainly imported from abroad. The small production of light-weight velvets, requiring 100/2 and 120/2 cotton yarns, occasionally running as fine as 140/2, is now being increased, and domestic spinners are beginning to compete on the 100/2 as the quantity required makes its production more worth while. In addition to the regular 2-ply there are to be noted small imports of "velvet filling" in such counts as 60/1 and 70/1.

In 1914 the import of cotton yarns for the velvet industry amounted to 233,992 pounds and in 1918 to 134,549 pounds. In 1914 the main import was 78/2, with 67,366 pounds and 79/2 with 50,725 pounds, followed by 60/2, 99/2, and 59/2; in 1918 the main import was again 78/2, with 80,500 pounds (79/2 having dropped to 8,600 pounds), but was followed by 120/2, 98/2, 59/2, and 79/2, in the order stated.

The velvet yarns imported in counts up to and including 78/2 are always carded only; the 98/2 and 120/2 are always combed. These yarns up to and including 98/2 are mainly of Egyptian cotton, whereas finer counts such as 120/2 and 140/2 are usually of sea-island cotton. They are mule-spun and have the usual warp twist. The larger portion is gassed. A small amount is reported as "gassed prepared" for special work. The 1918 imports were entirely in the in the gray; the 1914 imports included 32,162 pounds of dyed yarn, mainly black but in part blue and other colors. Most velvet yarns were in ordinary cross-reeled skeins put up in 10-pound bundles, but those above 100/2 were largely in diamond-reeled skeins.

Velvet yarns are imported mainly from Manchester and Bradford; some, in normal times, also come from silk centers such as Suchteln, Macclesfield, and Lyons. In 1914 there were, in the European-American trade, 19 exporters and 14 importers; in 1918 there were 8 exporters and 7 importers. The main volume of the trade is direct, from the British spinner or doubler to the American silk-velvet mill.

Imports of weaving yarns for silk velvets, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
59/2	19,100	9,000	Manchester	114,050	122,349
60/2	30,093	....	Bradford	66,141	8,600
78/2	67,366	80,500	Suchteln	20,117	....
79/2	50,725	8,600	Macclesfield	16,071	....
98/2	8,129	12,653	Lyon	7,513	....
99/2	22,853	5,000	Nottingham	....	3,600
100/2	5,342	....	Other	10,100	....
120/2	1,135	14,764			
Other	29,249	4,052			
Total	233,992	134,549	Total	233,992	134,549

WEAVING YARNS FOR MOHAIR OR WOOL MIXTURES.

Cotton yarns classed under the above heading are, in the main, for use as warp yarns in weaving mohair linings; minor uses are in making coverts, automobile tops, or fancy worsteds.

In 1914 there were 121,189 pounds imported for the mohair industry and 30,705 pounds for the wool industry; in 1918 there were 60,911 pounds imported for the mohair industry and 21,783 pounds for the wool industry. Of the yarns for mohair weaving the main counts in 1914 were 55/1, 120/2, 110/2, and 90/2, whereas in 1918 the main counts were 110/2, 120/2, and 78/2. Of the yarns imported for weaving with wool, the main counts in 1914 were 30/1, 15/1, and 120/1, whereas in 1918 the main counts were 120/1 and 40/1.

The census reported that in 1914 the wool industry as a whole, which includes mohair, purchased 56,988,329 pounds of cotton yarn. *This was in addition* to large amounts spun in wool mills having cotton departments. As the total imports of cotton yarn for use in mohair and wool mixtures in the same year amounted to only 151,894 pounds, the import is too small to be worth recording as a percentage of the domestic supply.

The mohair industry uses relatively large amounts of cotton yarns; owing to the difficulty of an all-mohair fabric keeping its shape, it is customary to employ a cotton warp. The cotton counts used are mainly 30/1 to 60/1 and 60/2 to 120/2, and these are generally of domestic spinning. The imports were almost entirely gray combed, without special finish, and were used as warp, in connection with mohair or alpaca filling yarns such as 1/30s or 1/33s, in making plain or twilled colored linings.

Of the cotton yarns imported for wool mixtures in 1914 the main count was 30/1. This was mostly imported in the gray, carded only, and dyed in this country for use in connection with worsted filling, such as 1/30s, in making cotton-warp dress goods. In 1918 the small imports were largely of 120/1 gray combed Egyptian for use in making covert cloths, automobile top cloth, etc. The largest importer stated:

> These yarns were imported by us for the use of other manufacturers. It is to be observed that they were imported on through tubes in order to have a minimum of waste in taking the yarn from the tube. All that we have imported have been used by woolen manufacturers for twisting around a woolen or worsted thread as a substitute for silk. When the white cotton thread is twisted about a white woolen or worsted yarn and woven into goods, the goods can be wool dyed in the piece and the cotton shows up white, giving a very handsome effect, the cotton thread being small as compared with the wool or worsted thread. In addition, the goods could also be cotton dyed in the piece to give a colored effect on the cotton. The quantity of cotton yarn used for this particular purpose is not large; but the same yarns can be put to an almost infinite variety of uses. While yarns of even finer counts than 120/1 are made in this country, as a rule mills make only for their own use in advanced manufacture. Because of this it is difficult to supply a special demand quickly from domestic mills.
>
> The present tariff also relatively discourages the production of fine yarns as compared with coarser grades. The greater the proportion of the manufacturing cost in foreign countries is to the whole cost, the more difficult it is for the American manufacturer to compete.

Imports of weaving yarns for mohair or wool mixtures.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
15/1	6,181	....	Bradford	118,689	60,911
26/1	5,060	....	Glasgow	23,010	....
30/1	13,024	....	Bolton	4,049	11,193
38/1	7,817	....	Manchester	1,880	5,866
55/1	31,016	3,629	Other	4,266	4,724
78/2	3,407	15,052			
90/2	10,202	3,758			
110/2	23,414	17,179			
120/1	4,820	16,859			
120/2	27,929	17,113			
Other	19,024	9,104			
Total	151,894	82,694	Total	151,894	82,694

HATBAND YARNS.

The manufacture of hatbands is a specialized branch of the silk-ribbon industry. Hatbands are made to some extent in mills that make other classes of ribbons but such hatbands are mainly of the cheaper grades; the weaving of the higher grades of hatbands is considered a separate industry and the firms are known as hatband manufacturers.

The first mill devoted to hatband manufacture in this country was started at Yonkers, N. Y., in 1893. The new industry developed gradually and at the 1913 tariff hearings, 20 years later, was reported to number about 500 looms. There was a considerable expansion during the World War. One of the largest hatband manufacturers estimates that between the commencement of the war in 1914 and the end of the year 1918, the number of hatband looms in operation increased from 480 up to 834. Individual mills possess from 14 to 100 looms each. Paterson, N. J., is the leading center of manufacture.

Germany has always been the largest producer of hatbands and American imports have been mainly invoiced through our consulate at Barmen. As the American industry developed, its products gradually displaced those from abroad. Hatbands are not separately enumerated in import statistics, but since 1909 there have been listed separately the values of narrow wares of silk other than ribbons, this group including bandings, beltings, bindings, etc. In 1910 the total value of such imports, which includes hatbands, amounted to $690,546, while in 1914 it had decreased to $510,029 and in 1918 to $159,051. These figures, in connection with other data, tend to show that imports of hatbands are now very small and that the American manufacturer dominates the home market.

The supremacy of the American hatband maker in the local field has been won largely with the use of imported cotton yarns. Some hatbands are made entirely of silk, but the staple article of large consumption is a mixed-silk fabric made of silk warp and cotton filling. For some time after the American industry started, the hatband manufacturers found it impossible to obtain domestic cotton yarns of the quality necessary to produce a fabric equal to the imported. The import of cotton yarns for this purpose, therefore, increased with the expansion of the domestic industry, but in recent years there has been an increasing tendency to use domestic yarns for the lower counts which constitute the bulk of the trade. The hatband manufacturers state that during the war American spinners, having more margin in price, have taken greater pains to meet their requirements.

Cotton yarn for use as filling in hatbands must be combed or else extra-well carded, preferably of long staple, and spun and twisted (doubled) very evenly, so that when woven with a silk warp the product will be as free as possible from lumps. The yarns are soft twisted, for instance, 25/2 and 50/4 are required with only 11 turns twist; 30/2 and 60/4 with only 12 turns; 35/2 and 70/4 with only 13 turns, and 40/2 and 78/4 with only 14 turns twist per inch. The manufacture of such evenly twisted soft yarns is more difficult than the manufacture of ordinary weaving yarns.

In the lower counts of typical hatband yarns, such as 20/2, 24/2, 25/2, 28/2, 30/2, 30/3, 35/2, 36/2, and 40/2, domestic yarns are proving very satisfactory substitutes; in medium fine counts, such as 50/2, 50/4, 55/2, 60/4, 70/4, and 78/4, the imported yarn is still preferred as being more evenly spun and twisted, particularly in the 4-ply; whereas the small amounts required of very fine counts, such as 120/2 and 140/2, are not ordinarily obtainable in the home market and are practically all imported. At the present time 25/2 and 30/2 are the counts most largely used in the hatband industry, and American spinners will probably continue to hold this trade after the present abnormal conditions are removed.

In 1914 the main counts imported for the hatband industry were 48/4, 30/2, 138/2, 49/4, and 25/2, whereas in 1918 they were 25/2, 39/2, 138/2, 30/2, and 36/2. The larger portion of the 1914 imports and much the larger portion of the 1918 imports were gray combed Egyptian gassed yarns from Manchester. These came in skeins and were finished in this country, being dyed and then subjected to a glazing or polishing process. The object of the glazing process is to lay the fuzz on the yarn and to obtain a smoother and more lustrous yarn for interweaving with the silk warp. In polishing for this purpose, however, the manufacturer endeavors to keep the yarn soft. Some hatband yarns from Germany, imported before the war, were invoiced as "½-glanz" or "half-glazed" to indicate that the glazing (polishing) process had not been carried far enough to harden the yarn. Even before the war imported hatband yarns came chiefly from England, and in the gray as it was found to be as cheap to dye them here as abroad. Some hatband manufacturers, however, preferred German-dyed yarns as being more regular in shade than the American-dyed. The hatband yarns imported from Germany were mostly blue-black and came from Elberfeld. According to statements made by importers most familiar with the trade, the greater part of the hatband yarns imported from Germany were originally spun in England, only the dyeing and finishing having been done in Germany. It is stated also that German hatband manufacturers themselves preferred English spinning.

Prices for dyeing, listed as additional to gray yarn prices on invoices, show that the Germans in the fiscal year 1914 were charging for dyeing blue-black hatband yarns about 34 pfennigs (8½ cents) a pound for counts under 50s; about 45 pfennigs (11¾ cents) for counts of 50s to 80; and about 60 pfennigs (14¼ cents) for 120/2. The hatband industry uses very few mercerized yarns, but in 1914 invoices show that the Germans were charging 30 pfennigs (7.14 cents) a pound for mercerizing; for instance, in July, 1913, 60/2 combed Egyptian blue-black was invoiced at 2.05 marks yarn price plus 34 pfennigs for dyeing, while 60/2 mercerized combed Egyptian blue-black was invoiced at 2.05 marks yarn price plus 64 pfennigs (15.23 cents) for mercerizing and dyeing. For Turkey-red dyeing the charge seems to have been 65 pfennigs (15.47 cents) a pound. Invoices were mainly in marks per pound.

The views of four leading manufacturers of hatbands as to imported cotton yarns are as follows:

Our cotton yarns were imported before the war, being mainly Egyptian yarns, spun in England and imported in the gray. We used imported yarns both on account of price and quality, principally on account of quality, because the American spinners could not compete with the English in price or workmanship. We are now using domestic yarns almost entirely, as the importation of yarns has been practically stopped, and the domestic spinner has taken more pains, having more margin in price, and has made great improvement in work, so that domestic yarn has practically taken the place of the imported. (Hatband Weaver No. 1.)

All of the principal sizes were imported and still are coming in from England in the raw and are made of Egyptian cotton. We were compelled to use these cotton yarns on account of the high grade quality. As an effect of the war, the price of this imported English cotton has been raised about 300 per cent. We have had little success with the 2-ply American cotton twisted in this country, and the little we have seen in the 4-ply is not fit to be used in a good-looking hatband. Referring to the dyed black cotton, we wish to say that the shade is very irregular, and as to evenness has no comparison with the black or blue-black fast dyed we imported from Elberfeld, Germany. The yarn dyed in Elberfeld also came from England originally. (Hatband Weaver No. 2.)

At the present time 25/2 and 30/2 are the most popular counts. The cotton yarns used for filling in mixed-silk hatbands are mostly glazed after dyeing. In glazing the manufacturer endeavors to keep the yarn soft. The idea of glazing is principally for the purpose of laying the small loose fibers. These yarns were mostly imported from England in the gray state and were largely of Egyptian staple. They were imported both because of price and quality. Hardly any of our filling yarns are now imported and in the counts of 25/2, 30/2, 35/2, and 40/2 the American product is very good, although, of course, the prices are considerably higher than those for English yarns before the war. As to the dyeing, beg to say that we invariably have the yarn dyed in this country, and did so even before the war. The dyeing has increased considerably in price since the war, and the quality of dye has been inferior to a more or less extent; progress has, however, been made during the last two years. (Hatband Weaver No. 3.)

About 75 per cent of our 20/2 and all of our 24/2, 28/2, and 30/3 are domestic; the other numbers we use are combed Egyptian yarns spun in England. These yarns are imported in the raw state and dyed in this country to fast colors or fast blue-black.

We do not use mercerized yarns. Our cotton filling yarns are imported from England for the reason that the English yarns are more evenly spun than our domestic yarns, but as the imported yarns rose so very high in price, and have been almost unobtainable lately at any price, the hat trade has had to be satisfied with us domestic manufacturers using the domestic article. We can procure in this market a fairly good domestic yarn in counts from 20/2 to 36/2, but for the finer numbers we prefer the English yarn. In the manufacture of our goods we need a long-staple cotton so that the yarn runs nice and smooth so the goods will not show any unevenness in the twist and be as free as possible from lumps. (Hatband Weaver No. 4.)

Imports of hatband yarns, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
25/2	12,684	23,937	Manchester	128,808	62,918
30/2	22,260	12,202	Elberfeld	25,014	....
35/2	7,632	1,450	Nottingham	21,100	25,956
36/2	294	9,980	Stockport	....	25,798
38/2	6,750	1,205	Other	5,256	....
39/2	....	19,924			
39/4	7,420	2,516			
40/2	6,159	....			
48/4	26,314	....			
49/4	14,588	4,143			
50/4	7,382	....			
58/4	9,644	....			
59/4	1,986	6,572			
70/4	9,840	8,399			
138/2	21,100	18,325			
Other	26,125	6,049			
Total	180,178	114,702	Total	180,178	114,702

RIBBON YARNS.

Cotton yarns imported for use in the ribbon industry are for weaving mixed-silk ribbons on the ribbon loom. These looms weave a large number of ribbons simultaneously by the use of small shuttles positively controlled by rack and pinion. In most instances the warp is of silk or of spun silk and the filling of cotton.

So far as ascertainable from available invoices the import of ribbon yarns of cotton amounted to 42,868 pounds in 1914 and to 47,497 pounds in 1918. Of the 1914 imports, 34,322 pounds were invoiced from Manchester and 7,419 pounds from Nottingham, whereas of the 1918 imports, 25,243 pounds originated at Stockport and 21,720 pounds at Manchester.

In 1914 the main imports were 78/2 with 20,785 pounds, and 98/2 with 12,551 pounds, whereas in 1918 the main imports were 78/2 with 18,198 pounds, 58/2 with 16,231 pounds, and 120/2 with 10,021 pounds. No other count amounted to as much as 5,000 pounds.

Ribbon yarns imported are, as a rule, gray combed Egyptian gassed. They are mule-spun and mainly of Egyptian cotton, though some of the lower counts are made of American cotton and some of the medium fine and fine counts are of sea-island cotton. Some of the finer counts are Grant-reeled, but in general they come in ordinary cross-reeled skeins.

The manufacture of ribbons is one of the most important branches of the American silk industry, being exceeded in value of output only by broad silks and possibly silk knit goods. A very large amount of the ribbons made in the silk mills is mixed-silk goods, and considerable amounts of cotton yarn are used in their manufacture. Domestic cotton yarns are generally used for this trade, less than 50,000 pounds of a few special counts being imported. The varieties of ribbons made from imported yarns are grosgrain and varieties. The yarns are usually dyed after import and before weaving.

WOVEN LABELS.

Woven labels are made on the narrow-fabric looms that are usually known as ribbon looms. Such looms weave a large number of ribbons or tapes simultaneously, the small shuttles being positively controlled by means of rack and pinion. The labels are woven in lengths like ribbons and afterwards are cut apart for sewing on garments. In weaving, the lettering or design is obtained by the use of a Jacquard attachment.

The finer labels made in the United States are woven with imported yarns. The main reason for such import is that very fine yarns such as are used for groundwork, and fast Turkey-red yarns such as are used for lettering, have not been obtainable in this country.

The import of label yarns in 1914 amounted to 37,310 pounds, of which 18,322 pounds were from Nottingham; the remainder came from Manchester, Barmen, Coventry, and Crefeld. The 1918 import amounted to 58,609 pounds, of which Nottingham supplied 33,080, while 22,826 pounds were invoiced from Manchester and the remainder from Coventry.

In 1914 the main counts imported for label work were 140/2, with 11,014 pounds, and 60/2 with 8,019 pounds. In 1918 the main counts imported were 138/2 with 20,650 pounds, 66/1 with 12,340 pounds, 140/2 with 6,389 pounds, 70/1 with 6,153 pounds, and 98/2 with 5,505 pounds. No other count amounted to as much as 5,000 pounds.

Fine label work must be smooth and clear-cut, so that most of the yarns imported for this work are gassed, mercerized, or prepared; practically all of the finer counts are gassed prepared, the same as lace yarns. The yarns for weaving the ground fabric are imported in the bleached state, while the yarns for weaving the lettering are dyed, mostly in Turkey-red. With few exceptions these yarns are combed mule-spun; the finest counts are made of sea-island cotton, but the great bulk is of Egyptian cotton.

One of the largest, if not the largest, user of imported label yarns reports as follows:

The yarns used by our company in the manufacture of shirt labels are all bleached and prepared and of the following sizes:

Warp	120/2, 140/2, 150/2, and 200/2.
Edges	78/2 and 140/2.
Ground filling	70/1, 120/2, 140/2, and 200/2.
Fast-color lettering	50/2, 60/2, and 80/2.

With the exception of 78/2, all these numbers are imported from England. Numerous attempts have been made by American spinners to spin the finer sizes, but up to the present date, 78/2 is the finest number we are able to obtain in domestic spun yarns.

The sizes used for lettering in fast-dye red and black are also imported from England, owing to the inability of American dyers to produce an absolute fast dye which will stand the general laundry abuse. One American dyeing company has been quite successful in fast dyeing, but as the facilities of this concern are rather limited, they are unable to dye for the label trade. Prior to the war, we imported our Turkey-red and black yarns from Barmen, Germany, and found them better than what we import now from England.

Following we give you a comparison of prices for imported yarns paid three years ago and now (August, 1918):

	1915 (per lb.).	1918 (per lb.).
70/1 bleached prepared D. S	$0.95	$3.15
78/2 bleached prepared	.85	2.40
120/2 bleached prepared	1.20	3.25
140/2 bleached prepared	1.33	3.80
150/2 bleached prepared	1.43	3.95
200/2 bleached prepared	2.55	5.50
60/2 Turkey-red prepared	.70	2.50

It may interest you to know that the finer numbers from 100s. up are exclusively spun in England. The writer was for years interested in the largest German woven label concern, and knows that not a pound of the finer numbers was spun in Germany or any other continental country. Lack of skilled help and specific water conditions for bleaching appear to be the main reasons why American spinners so far have not been successful in their many attempts to spin fine numbers.

An importer familiar with the label trade reports as follows:

The manufacture of woven labels was originally a German industry, and competition on labels has been almost entirely from Germany. Germany, however, does not spin much of its fine yarns; in fact, it does not spin yarns in bulk above 40s., and it obtained its fine label yarns from England. German firms making labels obtained a rebate on imported yarns used when they exported the labels.

If an advance in duty on fine yarns is made similar additional protection should be given on finished articles such as woven labels. This country spins only a small portion of the yarns needed above 100s., and fine yarns will continue to be imported. None of the fine label yarns can be obtained here, as they are mostly 140/2 and 150/2, similar in type and quality to lace yarns, and bleached before delivery. In addition to the fine ground yarns, there are also imported colored yarns for lettering.

TYPEWRITER-RIBBON YARNS.

Typewriter ribbons are of two general classes: First, cut-edge ribbons, and, second, woven-edge ribbons.

Typewriter ribbons are mainly of the cut-edge type, and are made by splitting cambric cloth into strips the edges of which are then gummed to prevent fraying. The typewriter cambric is usually 37½ to 41½ inches in width, and is woven of single yarns ranging between 60s and 110s. Some typewriter cambric is imported and subsequently split, but most of it is now woven in this country of domestic yarns.

One American typewriter company uses the woven-edge ribbon, manufacturing a portion in a weaving mill it owns in this country, and importing the remainder. Before the war it imported about 60 per cent of its woven tapes from one firm in Germany. It reports that since imports from Germany were stopped it has not been able to obtain any woven-edge ribbon material from England, or from any foreign country, and has been obliged to substitute cut-edge ribbons to fill requirements in excess of the woven-edge made by its American mill.

Woven-edge ribbons are made on ribbon looms which weave a number of the tapes simultaneously, and they are more costly to manufacture than machine-cut ribbons. To obtain a strong resilient tape that will withstand the wear caused by the blows of the typewriter keys and yet hold ink well, it is necessary that the fabric be made of the best long-stapled cotton, combed or super carded and mule-spun with a comparatively soft twist. Typewriter ribbon is a high-class fabric, and requires high-class yarns. The yarns used on the ribbon loom in making the woven-edge ribbon are imported, and the typewriter company states that it has not been able to obtain yarns of the required count and quality here.

Typewriter-ribbon yarns are imported from Manchester and Nottingham. So far as shown on available invoices, imports amounted to 2,716 pounds of 130/2 and 4,206 pounds of 78/1 in 1914, and to 6,641 pounds of 130/2 and 4,952 pounds of 78/1 in 1918. The 130/2 warp yarns were normally gray combed sea-island, gassed on tubes, though in 1918 the British embargo on sea island caused the substitution of Egyptian, and, owing probably to the high level of prices, some were supercarded instead of combed. The 78/1 filling yarns were gray combed Egyptian reverse-twist warp cops on through tubes.

The woven-edge ribbons made by the typewriter firm mentioned are apparently made with 79 ends of 130/2 warp, in a width of approximately half an inch and with about 116 picks of 78/1 to the inch.

The typewriter firm reports:

> We do not know of any other concern who is manufacturing woven-edge ribbons, suitable for typewriter use. We have heard of several who have attempted to do so, but we understand that it was mostly in the nature of an experiment and has been discontinued.

POLISHED COTTON YARN.

Large amounts of cotton sewing thread are polished in finishing, and there is also a large demand for polished cotton yarn for use in making shoe laces, hat braids, "luster" linings, and upholstery fabrics.

The polished yarns consumed in the United States are mainly of domestic manufacture. The quantity required is not ascertainable, but that it is large is evident from the fact that one firm alone reported in 1918 that its glazing plants were turning out about 45,000 pounds per week. Imports of polished yarns for the fiscal year 1914 amounted to 205,094 pounds and for the fiscal year 1918 to only 32,340 pounds. Imports are due to the fact that there is a certain demand for wiry high-polished yarns of a character different from those made in the United States; these yarns are finished by a different process and one that involves too high a labor cost to be profitably used in this country. Imports are polished in the skein and are almost entirely single yarns, whereas domestic yarns are polished in the thread and are rarely obtainable except in doubled yarns.

In general, yarns for polishing are first run through a special size mixture and the coated yarn then subjected to the action of polishing brushes. The size mixture is generally made with varying proportions of starch, dextrine, and paraffin. Upon the composition of the size mixture and the extent of the brushing operation largely depend the nature and degree of luster obtained.

In the foreign system the yarn is steeped for 12 hours in a special preparation and is hung, in the skein, on rollers in front of a large circular brush. The skeins are revolved around the rollers and brushed until perfectly dry; the polish thus acquired is very lasting. In many plants the operator rubs a piece of paraffin continually on the skeins as they are being polished by the brushes. Polishing in this way tends to cause the skeins to tangle and makes them very hard to wind; this fact, together with the slowness of the polishing process, makes the production of such highly polished yarns very expensive. More than one domestic firm has tried this style of polishing only to abandon it.

Imported polished yarn is wound tightly on spools. Spools from England are of wood, and those from Germany were of papier-mâché to save freight. When the yarn is received at the American factory *it is wound off on to* smaller braider bobbins or spools, with one, two, or more ends grouped on each according to the product which is to be made. The empty spools are shipped back to the foreign polisher. Attempts have been made to import this yarn in the hank and wind it in this country, but shipments in this form were found to be unprofitable because of loss in waste and expense in winding.

The American system of polishing is much quicker and cheaper than the foreign and gives a glazed finish that is entirely satisfactory for ordinary uses. It consists simply of subjecting the sized yarn to the action of polishing brushes as it is run from one spool to another, and then drying it over a cylinder. Under the American system it is not possible to produce yarn with the high luster of the German "eisengarn," or the equally lustrous glazed yarn from England, made by polishing the whole skein until the desired effect is attained.

At one time England supplied this trade, but was finally undersold by Germany. Of the 205,094 pounds imported in 1914, Barmen supplied 154,804. Smaller amounts were invoiced from Middleton, Manchester, and Nottingham, in England; Crefeld, in Germany, and Alost, in Belgium. During the war the import was necessarily decreased, though a partial supply was obtained from England. Shipments were interfered with by the action of the British Government in commandeering plants for shoe laces. Of 32,340 pounds imported in 1918 Glasgow supplied 18,219, the remainder coming from Middleton and Manchester.

In 1914 the main counts of the imported yarns were 30/1, with 46,098 pounds, 40/1, 36/1, 38/1, and 39/1; whereas in 1918 the main import was 36/1, with 9,039 pounds, and was followed by 38/1, 39/1, and 30/1. It is seen that imports of polished yarns normally range from 30/1 to 40/1. Imports of coarser or finer yarns are small.

The counts shown on invoices are the original counts of the spun yarn, and the polished yarn as imported would weigh heavier than this notation by reason of the coating of glaze. The general custom, in ordering, is to specify a weighting of 10 per cent, but as high as 30 per cent is sometimes specified.

The polished yarns imported are mainly of carded American cotton. They are made with medium twist and are not gassed before glazing. Only in exceptional cases are combed yarns polished. A small amount is made of Egyptian cotton. Of the 1914 imports 148,069 pounds were dyed—mainly black or tan, 44,536 pounds were bleached, and 4,050 pounds were in the gray. Of the 1918 imports 21,564 pounds were dyed, 5,401 pounds bleached, and 5,375 pounds gray. Logwood is largely used for coloring; this dye in itself gives the yarn a 10 per cent weighting. For any higher weighting quebracho is used.

At one time polished yarn was imported largely for making round and flat braided shoe laces of a hard, glazed finish, but the waning popularity of this type of shoe lace has led to smaller demands from this portion of the trade. Polished yarns are used in the manufacture of certain classes of upholstery where a hard, glazed finish is desired. In making so-called haircloth they are a very good substitute for genuine hair. Other uses are in making highly finished linings to compete with similar goods imported under the heading of "luster" linings, for weaving certain types of hat braids and other braids, and as a filler in silk bindings for blankets.

Imports of polished yarns, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
24/1	5,290	....	Barmen	154,804	....
30/1	46,098	6,270	Middleton	24,236	8,571
36/1	35,533	9,039	Manchester	12,297	5,550
38/1	33,722	8,571	Crefeld	9,064	....
39/1	22,361	8,460	Glasgow	....	18,219
40/1	35,756	....	Other	4,693	....
Other	26,334	....			
Total	205,094	32,340	Total	205,094	32,340

One of the largest importers of polished yarns writes:

> As a practical manufacturer, it is my opinion that it will never be practical to polish the fine single yarns in this country as it is being done abroad, as the hand labor is so great. The great advantage, as you will see, in polishing in the single, is that it gives more yardage and can be used for the same purpose. For instance, if a manufacturer is using 40/1 imported and has to buy domestic 80/2 ply, the difference in price is so great that it is cheaper for him to use the 40s single.
>
> You ask if the users of this yarn have been able to obtain a satisfactory substitute. In answer to this I would say that on account of the very high prices quite a number of the articles that were made from the imported yarns have been discontinued, but no doubt will be used again when imported yarns can be obtained. In a great many instances they were using domestic yarns, but the polish is not so good, and also is costing them a high price on account of having to use a two-ply instead of single yarn, as I have before explained, so that in my opinion there will always be a fair market for these imported yarns as soon as the war is over, and I doubt very much if it will ever be possible to polish them in this country.

A braid manufacturer who polishes large amounts of yarn reports:

> High-luster polished yarn can be produced in the United States, but the expense of it is tremendous and it should be well protected by tariff, if possible. We have in our office samples of high-polished yarn from Japan, and we believe it is every bit as good as the German.

A large importer of polished yarn, on being asked his opinion, states:

> In reference to the remarks made by the braid manufacturer, that the polished yarns from Japan are as good as the German, I would take decided exception to this. At the present they are not equal in color or polish or quality. I have my own office in *Yokohama and know* whereof I speak, but no doubt in time these people will polish

as well as the European manufacturers. In my opinion the best polished yarns come from England, Germany next, and Japan the poorest of all.

COTTON YARNS FOR WEBBING, BRAIDS, AND FISHING LINES.

The 1914 invoices show an import of 11,172 pounds, mainly 58/2 and 48/2, of yarns intended for weaving cotton webbing. These yarns came from Nottingham and Manchester. No imports for this purpose were recorded in 1918, though there may have been some included under the general heading of weaving yarns.

In 1914 there was an import of 3,953 pounds, and in 1918, 4,346 pounds of yarns for making braids. These yarns were mainly 39/2 from Macclesfield. An unspecified amount of the polished yarns are also used for making braids.

In 1918 there was an import of 5,476 pounds, mainly 35/1 and 38/1 from Manchester, specified as being intended for the manufacture of fishing lines. No import for this purpose was noted in 1914.

KNITTING YARNS.

Imports of knitting yarns are almost entirely of mule-spun Eygptian cotton and are confined to those of special qualities or fine counts. Of 1,050,465 pounds imported in 1914, no less than 720,698 pounds or almost three-fourths, were mercerized. Of the 907,439 pounds of knitting yarns imported in 1918, only 160,150 pounds were mercerized, but subtracting the glove yarns, which are a new specialty, it is found that of the 262,238 pounds of other knitting yarns over 60 per cent were mercerized. Hosiery and underwear yarns usually come on cones, though a portion are in skeins; glove yarns are generally in skeins.

A small import of hosiery yarns, mainly 78/2, 98/2, and 120/2, comes on wooden rollers in long warps of 478 ends, 6,000 yards. These yarns are gassed but not mercerized, and they are imported in this form for convenience in putting on the warp-mercerizing machine direct without further process. Warp mercerization is cheaper in the United States than in England, and a small amount is imported unmercerized to take advantage of this fact.

A measure of the changes that have taken place in imports of knitting yarns is afforded by the following:

Import of knitting yarns.	1914	1918
	Pounds.	*Pounds.*
Hosiery and underwear yarns	1,006,176	272,238
Glove yarns	....	635,201
Hand-knitting yarns	44,289	....
Total	1,050,465	907,439

It is seen that the import of hosiery and underwear yarns decreased greatly during this period, but that the decrease was largely compensated for by imports of yarns required by the new industry of fabric-glove manufacture. The import of hand-knitting yarns, which were normally from Germany, almost ceased during the war.

Manchester ranks first as the source of knitting yarns. In 1914 Crefeld, Bradford, and Nottingham, in the order named, were the centers of next importance; in 1918 Bolton and Nottingham ranked second and third, respectively, but imports from these sources came in much reduced amounts. The share of Manchester, the main source of glove yarns, increased, while imports from the others declined or stopped.

1. *Gray combed glove yarns.*—The manufacture of fabric (chamoisette) gloves in the United States is a war development. Formerly Germany supplied the world with over 90 per cent of its requirements, and the few produced in this country were made with the use of imported knitted fabric. This knitted fabric, for the use of the glove maker, is manufactured on tricot or milanese flat-knitting machines. With the stoppage of German shipments of fabric gloves, American manufacturers installed these special flat-knitting machines, but found that to get results equal to the German sueded and duplexed gloves it was necessary to go to the same source for the special yarns used—that is, to England. Germany normally spins only a small portion of its requirements of fine yarns. England formerly supplied practically all of the glove yarns used in Germany, the leading count being 78/1 gray combed Egyptian. The use of fabric gloves has greatly expanded in the United States with the development of the domestic industry, and the import of glove yarns has increased to considerably over half a million pounds a year. An increasing proportion of the yarn requirements of the glove-fabric manufacturers is now being obtained in this country.[1] Suitable yarns must be mule-spun, of long-stapled cotton such as Egyptian or sea-island. The English have an advantage in their longer experience in the manufacture of these yarns, but especially in the fact that they normally spin on the mule and use over half of the Egyptian crop, whereas there are comparatively few mules in this country and the Egyptian cotton imported is mainly used for tire fabrics.

In 1914 there were apparently no imports of glove yarns. In 1918, so far as shown by available invoices, imports amounted to 635,201 pounds. Of this amount, 482,443 pounds were listed as 78/1 and 76,029 pounds as 80/1. The remainder consisted of 47,174 pounds of

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[1] Under date of Aug. 26, 1918, one glove manufacturer wrote: "At the prices now being asked there is very little to choose as regards the cost between domestic and foreign spinning. The domestic-spun yarn has a little more twist than the foreign-spun yarn and works better in the machine, but it does not produce as soft a fabric as the foreign-spun."

98/1; 20,265 pounds of 90/1; 6,000 pounds of 79/1; 3,252 pounds of 70/1; and 38 pounds of 58/1. These were invoiced as "Gray combed Egyptian glove yarns 15X." The 15X refers to the number of skeins tied together. These yarns are not gassed or otherwise processed. A portion comes on cones, but the diamond or Grant-reel skein is preferred. The British make an extra charge for this manner of reeling, but it is preferred for expensive yarns as there is less waste and greater production is obtained when winding off.

In 1918 imported glove yarns were invoiced principally by two English spinners and came in mainly through one American yarn agent and two glove manufacturers who bought direct.

Imports of glove yarns, by counts and sources in 1918.

Counts:	Pounds.	Invoiced from—	Pounds.
78/1	482,443	Manchester	600,863
79/1	6,000	Bolton	34,338
80/1	76,029		
90/1	20,265		
98/1	47,174		
Other	3,290		
Total	635,201	Total	635,201

2. *Hosiery and underwear yarns.*—The import of hosiery and underwear yarns, excluding hand-knitting yarns, were, so far as shown by the invoices, 1,006,176 pounds in 1914 and only 272,238 pounds in 1918. Even in 1914 the imports constituted only a fraction of 1 per cent of the cotton yarns consumed by the domestic knitting industry, and local yarns had so steadily improved that there was no very strong reason for continuing imports except on the high counts or for special purposes. It is significant that almost three-fourths of the 1914 imports and over 60 per cent of the 1918 imports consisted of mercerized yarns, and that nearly all of them were of Egyptian cotton. Egyptian cotton, especially if spun on the mule, takes mercerization better than does domestic Peeler, and comparatively small amounts of mule-spun Egyptian yarns were obtainable in this country. During the war when British yarn prices went up out of proportion to American prices the knit goods manufacturers in this country found it not only difficult but unprofitable to import many of the yarns to which they were accustomed, and they naturally substituted domestic Peeler yarns.

A portion of the 1914 imports were for making underwear, and included such counts as 8/1, 10/1, 19/9, 38/1, and 60/1, but the greater part was of 2-ply yarns for use in the manufacture of hosiery, especially in reinforcing heels and toes of silk hosiery made on the full-fashioned hosiery machine. For this purpose mercerized Egyptian yarns of superior quality were preferred. A large portion was gassed as well as mercerized. These yarns came partly on cones and partly in skeins; they were almost entirely in the gray. Up to 120s each count was imported in both carded and combed qualities, but the larger part of the counts above 78s were combed. In many cases only the spinner can state definitely whether the yarn has been combed or simply carded, as it is almost impossible by examination to distinguish between a good carded yarn (especially if it is double carded) and a poor combed yarn.

The main counts imported in 1914 were 78/2, 120/2, 58/2, 76/2, 98/2, and 60/2; in 1918 they were 98/2, 78/2, 140/2, 120/2, and 58/2.

Lisle yarn is imported to a very small extent, being mainly used for hosiery. Included in the hosiery and underwear yarn totals for 1914 were 1,106 pounds of 70/2 lisle yarn, while in the 1918 totals are included 5,860 pounds of 70/2 and 7,664 pounds of 78/2. These yarns are carded brown Egyptian in skeins and cones, gassed but unbleached.

Lisle yarns first began to come into extensive use about 1885. "Lisle" was the original name of Lille, a fine-spinning center of northeastern France that supplies yarn for the neighboring knitting and lace industries. It is claimed that cotton lisle yarn originated there as a substitute for the linen yarns formerly produced. "Lisle" yarn, as the term is used in the knitting industry to-day, refers to a fully gassed 2-ply yarn that has the hard, clean, wiry appearance of linen. The doubled yarn is made from yarns spun with a medium-hard twist and differs little from lace yarns. The gassing process, however, is unusually severe, double gassing being sometimes used to remove all fuzz and loose fibers. Lisle yarns must be carefully made and very carefully gassed. Some users prefer the imported yarns because American firms, they say, do not take the time to gas so as to get the best results.

Imports of hosiery and underwear yarns normally cover a very wide range, from 8/1 up to 200/2. The main counts imported in 1914 were 78/2, 120/2, 58/2, 76/2, and 98/2; in 1918 they were 98/2, 78/2, 140/2, 120/2, and 58/2, in the order stated. There were normally a large number of firms interested in this trade, mainly yarn agents but also a few importing knitters. In 1914 there were 40 exporters and 53 importers of hosiery and underwear yarns, though many of these handled but small amounts. In 1918 there were only 16 exporters and 15 importers and the bulk of the trade was between one large firm of English spinners and doublers and an American yarn agent who acted as their representative.

Imports of hosiery and underwear yarns, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
1/8	43,187	....	Manchester	485,156	231,869
10/1	15,532	....	Crefeld	180,183	....
19//9	11,029	....	Bradford	164,282	....
26/1	10,800	....	Nottingham	141,967	17,452
28/1	12,500	....	Oldham	28,749	....
30/1	24,448	....	Schweizerthal	15,185	....
35/1	7,450	....	Bolton	12,586	....
38/1	8,207	....	Ancoats	9,398	....
38/2	18,645	3,584	Ashton-under-Lyne	....	11,927
39/2	14,540	750	Macclesfield	4,282	6,438
40/1	5,601	....	Other	8,677	4,552
40/2	10,551	688			
43/2	8,569	....			
48/2	26,412	2,690			
49/2	7,191	5,412			
50/2	29,851	....			
57/2	9,023	....			
58/1	5,033	3,755			
58/2	94,227	16,879			
59/2	8,613	7,768			
60/2	52,757	....			
64/2	7,218	....			
70/1	9,775	99			
70/2	1,106	5,860			
70/2	23,366	1,244			
75/2	11,857	4,751			
76/2	92,275	853			
78/1	6,673	12,947			
78/2	110,135	38,094			
78/2	....	7,664			
78/3	6,441	771			
79/2	5,397	3,200			
90/2	26,284	10,852			
96/2	15,341	....			
98/2	89,048	76,277			
99/2	6,770	1,000			
100/2	14,341	....			
115/2	5,324	3,994			
117/2	....	5,332			
120/2	95,954	20,332			
140/2	26,656	23,993			
Other	72,338	13,449			
Total	1,050,465	272,238	Total	1,050,465	272,238

One of the largest domestic knitting manufacturers, who formerly imported knitting yarns extensively, reported April, 1919, as follows:

Imports of knitting yarns were due both to quality and price.

Imports were due to the need for mule-spun Egyptian yarns for mercerizing. In our case these imported Egyptian yarns were purchased in a range of from 50/2 to 78/2. Of equal importance were our importations of C. S. I., running from 78/2 to 150/2. We have never been able to find a satisfactory yarn in this range of domestic spinning. This latter range of sea-islands were used by us in the manufacture of fine-gauge hosiery, while the Egyptians were used for a high-grade medium-gauge hose.

As to the future of these imported yarns, we will say that we are still using the sea islands whenever we can get them, but the Egyptians have been out of the market for the last six months. As soon as English spinners can again furnish us with these qualities we shall import them in equally as large (and possibly larger) quantities than before.

Our records show that in 1914 we paid for 78/2 C. S. I. mercerized skeins (landed in New York) 88 cents, and for 120/2, $1.36 a pound, while recently we have been paying for the 78/2, $2.50 to $2.65, and for the 120/2, $2.90 to $3.50.

3. *Hand-knitting yarns.*—In 1914 there was an import of 44,289 pounds which could be clearly distinguished as yarns for hand knitting. These were almost all coarse yarns, in counts from as low as 2s up to 30s and mainly in multiple ply, particularly the 4-ply. As these yarns were mainly from Germany and Switzerland, the group is lacking in the 1918 invoices. Most of them were invoiced in 1914 as "white knitting cottons." Such yarns are used interchangeably with crochet cotton in either knitting or crocheting such articles as infants' hoods, sacques, and bootees, and any small import from England in 1918 probably entered under the flat rate given to "crochet, darning, and embroidery cottons" rather than under the yarn paragraph. Those in the trade, however, state that domestic yarns were mainly substituted therefor. These yarns were carefully spun from Egyptian cotton and most of them were combed before spinning; a portion was also mercerized.

ELECTRICAL YARNS.

Yarns spun for use in covering wires to convey electrical current are known in the trade as electrical yarns, sometimes as insulating yarns. Prior to the war such yarns, with the exception of occasional small shipments of the finer counts, were of domestic manufacture. The war caused a great increase in the demand for electrical yarns; especially was there an unusual demand for the finer yarns. Some of the yarns required for winding wires for airplane magnetos ran into very fine counts. This demand for fine single counts could not be satisfied in this country, and the import in 1918, so far as obtainable from invoices of imports for consumption, amounted to 651,887 pounds, in striking contrast with the normal import, as represented by the 1914 figures, of only 12,256 pounds.

The electrical yarns imported are all gray, combed, mule-spun single yarns, no imports being recorded of ply yarns for this purpose. These yarns are made of long-stapled cottons, mainly Egyptian. Abassi (white Egyptian) or Joannovich was preferred. As the war progressed the tensile strength of imported electrical yarns is reported to have declined, and importers state that in 1918 a large amount of American Allenseed was being used in place of Abassi, and Mitafifi (brown Egyptian) in place of Joan. The growing of Abassi and Joannovich has now (1918) almost ceased. For the extreme fine counts sea-island is essential, and this was normally used to some extent in special high-grade yarns of lower counts; the British restrictions on exports of sea-island yarns largely caused the elimination of such yarns in 1918.

Of the small import in 1914 the main item was 8,058 pounds of *117/1. This was possibly* sold as 120/1, in the same way that counts near 100s are sold as 100s, the spinner profiting by "heavying" his counts even in cases where there is nothing in the tariff law to cause the importer to order a slightly lower count in order to get the yarn in at a lower rate of duty. In 1918 there was an import of 301,441 pounds of 97/1 and of 181,829 pounds of 98/1. There were smaller imports of 78/1, 120/1, 140/1, and 117/1, and an insignificant amount as fine as 200/1.

Part of the imports come put up with a multiple number of single ends wound together on cheeses, and part with one thread, as spun, on large warp cops. The leading import is usually stated on invoices as "97s Super Combed Joan Twist on cheese, 6 ends laid flat," which means that it is made of Joannovich (Egyptian) cotton, carefully combed, spun with a warp twist, and put up on cheeses (tubes or cones) with 6 ends wound on side by side. The number of ends thus grouped together in winding varies from 3 to as many as 30, though 5 to 6 has been the customary number.

It may be noted that occasionally such yarn was found invoiced as "6/97," "12/97," and "30/97," or the like. This would normally indicate, according to the English export practice which places first the number of single yarns folded or twisted together and second the individual yarn count, that 6, 12, or 30 ends of 97s had been twisted together to make ply yarns. For electrical yarns, however, this was misleading, as the yarns had not been twisted together to form ply yarns and, though grouped together, they were still in the single and easily separable from each other. In most instances one familiar with the yarn import trade could detect the error from the context, which usually had some such indication as "patent spools" or the like, even where the term "electrical yarns" was not specified.

Electrical yarns imported on warp cops are usually sold by the importing yarn agent to thread mills or to other firms, which have facilities for winding them onto cones and grouping together as many ends as may be desired. These concerns supply electrical firms which use braiding machines in covering the bare copper wire with the grouped yarns. Yarns which come already grouped on cones are ready for use on the braiding machines and are sold direct to the electrical firms. Importers state that in general English winding charges are low, but that if desired put up on the patented Universal winding machines, the product of which the English call "patent spools," they charge higher for this work than customary in this country.

Electrical yarns are supplied mainly by Manchester and Bolton. Some spinners do their own exporting, but in 1918 almost half of the trade was in the hands of one Manchester yarn agent who bought for the account of one American firm.

For a period before and after the United States entered the war there was apparently an insatiable demand for fine electrical yarns, and the import of this new war-time yarn expanded to large proportions; in fact, it was an important factor in the record imports of 1917. Some importers, however, expecting the demand to increase and fearing possible interferences in the import trade, contracted for more than the domestic trade could consume, and at the end of the fiscal year 1918 they had large stocks left in bonded warehouses and not yet entered for consumption.

Imports of electrical yarns, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
78/1		74,080	Manchester	11,956	371,210
97/1		301,441	Bolton		209,937
98/1	1,022	181,829	Middleton Junction		49,325
117/1	8,058	14,324	Bradford		18,997
120/1	1,131	45,797	Other	300	2,418
140/1	46	21,588			
Other	1,999	12,828			
Total	12,256	651,887	Total	12,256	651,887

A yarn house that imported and sold large amounts of electrical yarns during the war reports:

> I had been after this business (i. e. the trade in electrical yarns) for some time but I was not successful in getting any of it until March 2, 1916, when I sold 5,000 pounds. From that time on the business steadily increased.
>
> At this time (Mar. 10, 1919) the importation of electrical yarn has practically discontinued. We are importing nothing. We have recently again figured on this business but unsuccessfully. Our price for the yarn delivered here, all expenses paid, that is, duty, freight and insurance is $2.20 for 98/1. Our former customers state that they can buy domestic yarn of the same count at $1.70 to $1.90.
>
> Our prices for 98/1 gray combed electrical yarn, per pound, have been as follows:

Mar. 2, 1916	$1.00	Apr. 9, 1917	$1.85
July 18, 1916	1.20	Apr. 11, 1917	1.90
Oct. 17, 1916	1.46	Sept. 1, 1918	2.35
Nov. 17, 1916	1.90	Nov. 11, 1918	2.85

> The terms of payment were 2 per cent discount for payment on the 10th of the following month, billing date of delivery, net weight, everything paid to the customer's town.
>
> You will note that the price of the imported yarn steadily climbed from our first order, in 1916, until the time of the armistice and has since then steadily declined until it is now, as stated above, $2.20. The decline is accounted for to some extent by the reduction in war risk insurance and marine insurance and freight rates. Letters from the mill in England advise me that there has been no reduction in the cost of labor and overhead charges and that labor has advanced while overhead charges

> have remained, since the armistice, about the same. The mill is still very short of men who have not been released by the War Department and I feel that when they have their full quota of workmen they will be able to further reduce prices but I doubt very much if they will ever get them down to the American level. I should say offhand that this class of yarn does not require further tariff protection. The English yarn is not better than American yarn in winding and quality.
>
> The electrical yarn handled by us has been on wound cheeses, the majority of it having 24 or 30 ends wound parallel. Quotations from the English mill for the same yarn on through tube cops were usually 10 cents a pound cheaper, indicating that their charges for multiple-winding 98s were about that amount.

One of the largest domestic firms interested in winding electrical yarns on commission stated, in reply to an inquiry:

> We take pleasure in listing below our costs per pound of winding various parallel ends on tubes for the electrical industry:

Year.	Count.	6 ends.	16 ends.	24 ends.	30 ends.
1914	100s	$0.1074	$0.0812	$0.0701	$0.0672
1915	100s	.0946	.0827	.0715	.0670
1916	100s	.1054	.0769	.0640	.0587
1917	100s	.1055	.1113	.0958	.0896
1918	100s	.0996	.1389	.1193	.1113
1919	100s	.1445	.1525	.1312	.1228

EMBROIDERY YARN.

Embroidery is ornamental stitching. Embroidery always implies the existence of some foundation material such as cloth or net on which the embroidery is to be worked; in this respect it differs from lace which is made direct from yarn.

Embroidery yarns are soft spun in order to fill up the design with the least number of stitches and therefore at the lowest cost. In order to obtain the necessary tensile strength to withstand the strain of pulling through the cloth, embroidery yarns are made of long staple cottons and usually in 2, 3, 4, 5 or more ply. Most of them are combed; only when coarse counts are used on the Bonnaz machine are carded yarns customary. Imports are almost entirely mule-spun and are mainly of Egyptian cotton, sea-island being used for very fine counts and for some special purposes. Domestic yarns, now largely substituted for the imported, are mainly of combed Peeler. Even before the war American embroidery manufacturers were using considerable amounts of domestic yarns in coarse and medium counts; during the war yarns up to 80s have been, in the main, of domestic manufacture, but the small amount required of finer counts has been obtained mainly from England. In normal times Switzerland was the main source, about half of the total being invoiced from St. Gall, the machine-embroidery center of the world. Since 1915, when Switzerland put an embargo upon the export of cotton yarns, Manchester and Whitworth have been the sources of most of the greatly reduced imports of such yarns. The domestic mills, aided by England on the finer end, have supplied the embroidery industry with satisfactory yarns during the war, although it is stated by leading manufacturers that from neither source is the twisting of the yarns up to the Swiss standards. It appears that a large portion of the fine singles used in Switzerland were obtained from England but that the Swiss are adept in twisting and finishing these yarns so as to produce a soft and lustrous effect. The greater part of the imports have been in the gray, but substantial amounts have been bleached or dyed. Only a portion is normally gassed, but a considerable proportion is used in the mercerized state. Imports in 1914, a normal year, ranged from 1¼/2 ply up to 180/5 ply which is indicative of the wide range of counts used in embroidering. Taking the industry as a whole the most important import has been 60/2 (including variations such as 58/2 and 59/2) which makes up over a third of the total.

The American machine-embroidery industry centers around New York though there are more of the machines on the New Jersey side of the North River, in Jersey City, West Hoboken, Union Hill, West New York, Weehawken Heights, Guttenberg, etc., than in New York City including Brooklyn. There are also aggregations of embroidery machines at Philadelphia and Chicago, and smaller numbers at other points. Most of the shuttle machines and hand machines used for embroidering in this country are of German or Swiss manufacture.

The embroidery industry may be logically divided into four branches:

1. Shuttle-machine embroidery.
2. Hand-machine embroidery.
3. Bonnaz and sewing-machine embroidery.
4. Hand embroidery.

Each branch is more or less separate and distinct and has its own special requirements as to yarns.

1. SHUTTLE-MACHINE EMBROIDERY YARNS.

Shuttle-machine embroidery is perhaps more commonly known as schiffli embroidery. St. Gall in Switzerland is the main world center and "schiffli" is the Swiss form of the German word "schiffchen" (shuttle). The shuttle machine (schiffli machine) is operated by power and employs a large number of needles simultaneously in repeating a single design. It might be called a gang sewing machine. The process on a schiffli machine is similar to that on a sewing *machine*, except that instead of a single needle there is a row of needles, and instead of the cloth being laid horizontally it is fastened vertically. The needles are clamped in a horizontal position on a sliding bar, and the distance between them shows the repeat, usually called the "rapport" of the pattern. Each needle carries through its "embroidery" or "tube" yarn, and before the needle is withdrawn this yarn is fastened in place with a lock stitch, similar to that of the ordinary sewing machine stitch, made with "schiffli" or "bobbin" yarn carried by a small shuttle sliding in a groove back of the cloth. As the needles are moved in and out on a fixed slide, their working place in the cloth can be controlled only by moving the cloth. The foundation material is therefore mounted with pin hooks on a movable framework which can be shifted to right or left, and up or down, by means of a pantograph. The pointer of the pantograph is held by the stitcher who, standing at the left of the machine, follows the lines of a design tacked on a vertical board. For convenience in tracing, the design is usually six times larger than the embroidery pattern to be produced, and the pantograph is arranged for this proportion. In the operation of the more expensive "automats" the stitcher is eliminated and the machine embroiders automatically according to the design punched on a Jacquard card. Practically all schiffli machines embroider two strips at once, one above the other, but every needle on the whole machine does the same kind of work at the same time.

Schiffli tube yarn.—Of the two yarns used together in making shuttle-machine embroidery, the tube yarn is the one that appears on the face of the cloth and may therefore be said to be the embroidery yarn proper. The small tubes of yarn, largely about 2½ inches high by 1½ inches in diameter, wound on paper cores, are stuck on skewers on the front of the embroidery frame, and the yarn from each is threaded through the eye of one of the fixed embroidery needles. This embroidery yarn is usually invoiced as "cotton yarn on small schiffli tubes" or as "cotton yarn on small X tubes." The main counts used are 40/2, 50/2, 60/2, 80/2, 100/2, and 120/2; a few are finer or coarser. Imports, of course, are shaded a number or two to secure admission as cheaply as possible, that is, 58/2 is imported instead of 60/2, and 78/2 in place of 80/2.

Schiffli bobbin yarn.—This second class of yarn does not appear on the face of the cloth but is used to fasten the schiffli tube yarn in place. There is not the same necessity to fill in, and, as the finer the yarn the more yards to the pound, schiffli bobbin yarn is rarely employed coarser than 50/2, in fact the main counts used are 60/2, 80/2, 100/2, and 120/2. It is usually invoiced as "4/4 bobbin yarn," occasionally as "special gray cotton." The 4/4 refers to the gauge of the machine for which it is used; that is, to the distance apart of the needles which repeat the design, in French inches. The symbol 4/4 means 1 inch (French) apart; 4/4 bobbins can be used on all types of the new schiffli machines, whether arranged to make 6/4, 8/4, or 12/4 work. These minute bobbins are largely about 1¼ inches long and ⅜ inches in diameter, and are wound on a bare spindle; that is, without any paper core.

Both the tube and bobbin yarns for shuttle machines are normally imported ready for use. Occasionally a small quantity has been imported in the skein or on large tubes or cones and then put up in this country. This practice is exceptional, however, as the work can be done cheaper abroad. American spinners do not attempt to put up the yarn as required for this work but sell in skeins or on cones to a few specialty houses that cater to the embroidery trade. These specialty concerns wind the yarn into the small tubes and bobbins, first bleaching or dyeing or mercerizing as may be required. Many of the embroidery manufacturers own their own bobbin winders. There are various sizes of bobbins according to the sizes of shuttles used in the machine; the automatic bobbin machines, however, can be adjusted to produce the various sizes.

These yarns are all combed and those imported have usually been of Egyptian cotton up to about 100/2. Sea-island is employed for the finest. Domestic substitutes have been of combed Peeler. Imports have been most largely in the gray state; a fair amount has been in the bleached as well as some in the dyed state. The bobbin yarn is rarely required mercerized but a considerable portion of the tube yarn, the embroidery yarn proper, is used in the mercerized condition. Much of the tube yarn from Switzerland owes its lustrous appearance to gassing rather than to mercerization. Schiffli yarns imported are generally 2-ply but there was formerly some import of 3-ply, which in Switzerland is used more than the 2-ply. For instance, 90/3 was imported and used for the same purpose as 60/2, and 120/3 was used in place of 80/2. Some carded yarns are made in Europe for the shuttle embroidery trade; these are not imported because coarse carded counts can be obtained to better advantage here in the United States, and because combed yarns are generally considered essential for this work.

2. HAND-MACHINE EMBROIDERY YARN.

The hand machine for making embroidery differs essentially from the power-driven shuttle machine. The cloth is mounted on a movable framework and is controlled by a pantograph, as in the case of the shuttle machine, but instead of two yarns, tube and bobbin, being used to obtain the embroidered effect there is only one and the same yarn therefore shows on both sides of the cloth. A movable framework or carriage, holding two or three rows of double-pointed needles in clips, rolls in and out on slides at the front, and a similar carriage operates back of the vertically hung cloth. As the needles are pushed through the cloth by one carriage they are grasped and pulled through by the clips in the other carriage. This carriage moves out to the length of the threads to tighten them, then moves in and returns the needles through the cloth to the other rows of clips. The distance that the slide moves out each time shortens with the decreasing length of the thread. The operator moves the pantograph with his left hand; with his right he operates the crank, and with his feet he works the pedals which move the carriages in and out. The needles have to be frequently rethreaded, and this is done by a special machine that cuts the thread the exact length required.

Yarn for the hand machine must have a greater tensile strength than yarn ordinarily used on the shuttle machine. The shuttle-machine yarn goes through the cloth only once at each stitch and is caught at the back of the cloth and held there by the yarn fed to it by the shuttle or shiffli. The hand-machine yarn is in thread lengths of about 40 inches, and each thread goes through the cloth back and forth until it is almost used up. If the yarn is rough or weak, it will be chafed and torn after a few stitches, therefore strength and smoothness are prime requisites. In order to attain this end and yet have a soft yarn, hand-machine yarns are made in 4, 5, 6, and even 7 ply, of good long-staple cotton. When 2-ply yarns are used in the coarser numbers, such as 10/2 up to 40/2, the very best and longest sea-island is required.

In the United States hand machines are used mainly for embroidering handkerchiefs. Distinctive of this trade is the use of 5-ply yarns, in counts ranging from 30/5 up to 180/5. These are ordinarily used in special 88-inch skeins, only a small percentage being employed in the normal 54-inch skein. It is said that these 5-ply yarns have been difficult to get in this country, and that 2-ply and 4-ply yarns have been substituted to give equivalent sizes; for instance instead of 50/5 there have been substituted 20/2 and 40/4, these being equivalent in size to single 10s. The 2-ply now used runs from 16/2 up to 30/2 and the 4-ply from 10/4 up to 100/4.

Aside from the desirability of filling up the design quickly, soft yarns are required in embroidering by both power and hand machines in order to get production. In making a stitch, the front of the shuttle machine and the frame holding the needles of the hand machine move close up to the cloth and simultaneously the yarn hangs down slack. If the yarn is hard twisted it curls up and makes a loop or a corkscrew which, when the yarn is pulled taut again, may not open up. In such case the yarn will either break at the loop or corkscrew when the attempt is made to pull it through the cloth or, if the yarn is strong enough, will make a hole in the cloth. The twist must therefore not only be soft, but balanced just right to facilitate smooth operation.

3. BONNAZ AND SEWING-MACHINE EMBROIDERY.

The Bonnaz machine, imported and used in this country for special work, is a one-needle machine on the general principle of the ordinary sewing machine, but employs mainly heavy yarns and mercerized cords. There are two types of Bonnaz embroidery machines and these differ in their yarn requirements. The first is a plain stitch machine which can use any ordinary yarn from the coarsest up to 60s, in plies of 2, 3, 4, or more. The second is the cording machine which can use only a reverse twist yarn; that is, one with left-hand twist. This machine uses numbers from 8/2 up to 20/3. These machines are normally operated with American yarn and in most instances the yarn is carded only, differing in this from other embroidery yarns which are mainly combed.

Embroidery for certain purposes is being made to an increasingly large extent on special sewing machines, with embroidery attachments, turned out by the Singer Sewing Machine Co. These are called "stamped embroideries." They employ mainly highly lustrous coarse yarns such as 2/2 ply and 2/3 ply, both in the bleached and dyed state. Up to 1914 D. M. C. imported embroidery yarn was largely used for this work; since then owners of these machines have used American yarns.

4. HAND EMBROIDERY.

Yarns for embroidering by hand are mainly in 3 and 4 ply and run from 10/3 up to 60/4. They are usually bleached or dyed, either plain or mercerized. The principal numbers in hand embroidery yarns were formerly imported into this country from the Dolfus-Meig Co., of Mulhausen, Germany, and Paris, France. This yarn was known as the D. M. C. brand. This company manufactured a "broder" yarn (4-ply), "floche" yarn (from 4 to 7 ply), "cordinettes," "crochet," "moulines," and several other types. During the war these were replaced by American brands. The imported yarns were mostly of sea-island, although the domestic manufacturers have had to substitute Peeler owing to the high prices. The D. M. C. yarns were combed, gassed, and mercerized. The yarns supplied by American spinners are mostly ungassed.

Imports of embroidery yarns, by counts and sources.

Count.	1914	1918	Invoiced from	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
3/2	26,270		St. Gall	268,688	
5/2	29,038		Liverpool	70,467	
8/2	8,734	541	Manchester	57,905	60,618
9/2	20,114		Newzingen	26,724	
30/2	21,707		Rorschach	26,256	
30/4	4,517	598	Barmen	22,869	
33/4	5,100	2,119	Plauen	21,091	
36/2	12,065		Bradford	16,614	
38/2	24,965	333	Paisley	6,374	
39/2	19,661		Dietfurt	6,347	
40/2	26,698		Whitworth		31,438
46/2	33,371		Stalybridge		5,206
48/2	8,829	6,840	Others	27,274	3,769
48/4	11,426				
49/2	11,626				
50/2	7,329				
58/2	89,582	31,438			
59/2	15,801				
60/2	79,064				
78/2	13,205	21,170			
98/2	3,612	8,621			
120/2	2,639	25,108			
Other	74,253	4,263			
Total	549,609	101,031	Total	549,609	101,031

NOTE.—The appraiser of the port of New York, in reply to an inquiry as to the amount of embroidery yarn that was apparently dutiable under paragraph 250 in the fiscal year 1918, replied:

All yarns chiefly used for embroidery purposes at the time of the passage of the present act, October, 1913, whether for hand or machine work, put up in form ready for use, are assessed under paragraph 251 in harmony with Treasury Decision 36982. The amount of embroidery yarn which your study of the imports of 1918 would indicate were entered under the progressive rates of paragraph 250 are believed to be in great proportion yarns returned by the appraiser under paragraph 250 prior to the rendering of Treasury Decision 36982, against which assessment no protest was filed by the importers. Therefore these cotton yarns, decided ultimately to be dutiable as embroidery cottons, remained liquidated as cotton yarn under paragraph 250.

Embroidery yarns, foreign and domestic.—Commenting on the substitution of American for foreign embroidery yarns during the war, one importer states:

Since the latter half of 1914 the American embroidery trade has become accustomed to the use of American yarns, with the exception of the very fine numbers from No. 100 up. However, the quantity of these fine numbers used by the embroidery trade is probably not more than 2 per cent of the entire consumption of embroidery yarn. The spinners and converters have become well organized and have made great strides in efficiency in supplying embroidery yarns, and it may be stated with confidence that the American embroidery trade will continue to use American yarns after the war, unless foreign spinners can give material price inducements.

Another importer states in regard to shuttle-machine embroidery yarns:

As to the effect that the war has had on imported yarns formerly supplied by Switzerland: We have not had very satisfactory results with yarns imported from England for this purpose and we have done better with the domestic mills here, but it is only fair to say that it has not been as satisfactory as the Swiss yarns and the industry used same because it is the best that could be supplied.

One of the leading embroidery manufacturers states:

> Before the war schiffli embroidery yarns were imported from Switzerland in large quantities. They were mostly made from Egyptian cotton and higher counts above 100/2 were made from sea-island cotton. Ninety per cent of all imported yarns were combed or supercombed and gassed. England and the domestic mills supplied the embroidery trade with satisfactory yarns during this war, although the twisting of the yarns never came up to the Swiss standards. The fact of the matter is that 90 per cent of all singles used in Switzerland came from England, but the Swiss know how to twist these yarns so that they could produce a soft and lustrous effect after finishing, although the yarns are not mercerized. The people in the trade speak of "embroideries with a domestic look," which simply means that American-made embroideries have not the fine appearance of the imported article. Our firm in particular used Swiss yarns almost exclusively before the war and built up a considerable reputaiton on the fact that our product was almost as good in quality and appearance as the imported article. Most yarns imported from Switzerland were plain gray yarns combed and gassed, although a quantity of bleached and mercerized goods have also been imported. American mercerized yarns, especially if made of long-staple cotton, compare favorably with Swiss yarns.

An importer who caters to a special section of the embroidery trade writes:

> The 27/4, 30/4, 33/4, and 36/4 Turkey-red combed yarns which we import are used mainly for marking and cross-stitch embroidery on napkins, towels, tablecloths, etc.
>
> We have never been able to procure the required qualities of yarn, and especially the Turkey-red dyeing in this country. Since the prices of these yarns have advanced the sales have decreased to a very large extent, and we find that the trade has changed in a great many instances to using marking inks. For this reason we feel that any increased tariff rate would merely have the effect of further curtailing the uses of the yarn, and would therefore bring no increased revenue to the Government, nor would it protect any domestic industry, for, as far as we know, there is no domestic industry on this particular yarn and dye.

YARNS FOR THREAD MAKING.

The import of "sewings" for making sewing thread is one of the minor items of the trade in foreign yarns. The total, so far as disclosed by available invoices, amounted to 135,628 pounds in 1914 and to only 69,498 pounds in 1918.

The counts of cotton yarn used for making sewing thread range from 14s to 130s. The main counts of yarn imported for this purpose in 1914 were 45/3, 40/3, 39/3, 58/3, 36/3, 48/3, and 38/3, in the order named; in 1918 the main counts were 49/2, 50/3, 49/3, and 70/3. Egyptian cotton was most largely used in these imports, though in 1914 most of those above 45/3 were made with sea-island cotton. American cotton was used for a portion. In 1914 these yarns were largely carded, but in 1918 the combed yarns predominated. In both periods gassed yarns constituted the larger part of the imports; in 1914 most of them were mercerized as well as gassed, while in 1918 only small amounts were mercerized. Imports are almost entirely in the gray, in Grant-reeled skeins, put up in the usual 10-pound bundle and then baled. These yarns were, in the main, marked "reverse twist." The 36/3 were made with 13 to 14 turns twist per inch; the 45/3 with 14½ turns; the 50/3 with 14 to 15 turns, and the 58/3 with 15 to 16 turns twist per inch.

Sewing thread is made in 2, 3, 4, and 6 plies, or "cords," as they are called in the sewing trade. Imported "thread yarns" are mostly 3-ply yarns for making into 6-cord sewing thread by doubling and polishing. The finished product is put up on small spools for the retail trade or on larger spools for the manufacturing (clothing) trade. Two or three ply sewing thread is twisted once only; the doubling twist is in the opposite direction to the spinning twist. For sewing thread that is more than three-ply, for example, the 4-cord and the 6-cord, there are two doublings; in the first doubling the yarn is twisted in the same direction that it is spun, this being known as twist on twist, but in the second or finishing doubling (cabling) the direction of the twist is opposite to that inserted in spinning. The use of twist on twist in the first doubling of a 6-cord sewing thread, and then a reverse twist on the second doubling, gives a stronger and more elastic thread than would be the case in a cabled yarn where each successive twist is opposite to that preceding. Elasticity and strength are distinguishing features of good sewing threads. The 4-cord and 6-cord sewing threads are more costly to manufacture than the "one throw" sewing threads (made with one doubling) used for manufacturing.

The import of yarn for making sewing thread is inconsiderable as compared with the great volume of yarn spun in this country for the same purpose, and that any is imported at all appears to be due to occasional demands for carefully gassed yarns for some special purpose.

The term "sewings," under which most of these thread yarns were invoiced, is sometimes used for sewing thread as well as for yarn for making sewing thread, and it is not always easy to distinguish between reverse-twist ply yarns for making sewing thread and sewing thread itself.

Imports of sewings, by counts and sources.

Count.	1914	1918	Invoiced from—	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
36/3	11,428	900	Manchester	114,180	63,116
38/3	7,554	....	Bradford	12,421	1,375
39/3	16,505	3,000	Other	9,027	5,007
40/3	17,621	4,090			
45/3	31,365	496			
48/3	10,479	....			
49/2	....	12,420			
49/2	....	6,923			
50/3	2,877	8,459			
58/3	15,186	....			
70/3	513	6,388			
Other	22,100	26,832			
Total	135,628	69,498	Total	135,628	69,498

One of the largest domestic thread makers, after seeing the foregoing, stated:

According to the usual practice among representative American thread manufacturers, the imported sewings (or "thread yarns", as we would designate them) listed in your report, if intended for thread, would, in all probability, be used in the following ticket or thread numbers:

Imported yarn counts.	Thread No.
36/3	36
38/3, 39/3, 40/3	40
45/3	50
48/3, 49/3, 50/3	60
58/3	70
70/3	80
49/2	90

We know of no particular need for importing sewing threads or yarns for that purpose, as this country has been able to meet the demands for all kinds and qualities.

The following table, we believe, will show approximately the average numbers of yarns in use by representative manufacturers in this country for the principal threads in the standard sizes. These approximate numberings (while arbitrarily fixed in some instances, perhaps) have become standard with the trade through many years of established usage:

Thread or ticket No.	12	16	20	24	30	36	40	50	60	70	80
Yarn size:											
6-cord	34	38	43	47	57	67	76	96	106	115	125
4-ply	15	20	26	30	37	43	47	56	66	76	86
3-ply	14	15	18	22	28	33	37	42	47	56	66

American thread mills in the past have been large users of sea island cotton and have subsequently used large amounts of high grade Egyptian cotton, such as Yannovitch and Sakelaridis, and also some American-Egyptian cotton. These are required for the best grades and fine counts. Peeler cottons are used very largely for the medium grades. Thread mills spin up to 130s count.

Another large thread manufacturer writes:

Yarn when advanced beyond the condition of the single strand can always be used for sewing purposes. * * * It is well to note that cotton sewing thread is made in both regular and reverse twist in all plies and is constantly used for hand and machine sewing. * * * The trouble with the present tariff, as pointed out to the Ways and Means Committee at the time the tariff for 1913 was up, is that cotton thread, which is a highly finished article, has actually a less duty than the yarn from which it is made; or, to put it in another way, the raw material for thread, which is single yarn, bears a higher duty than the finished article, and it seems to us that you will have continual difficulty with all tariffs until this is altered. It may interest you to know that this same situation arose with our company in connection with the Canadian tariff. We discovered that some thread manufacturers were bringing in thread, of two or more strands of single yarn twisted, as yarn and paying a lower duty, while in our importations of this same class of goods, which we brought in as thread, we paid a higher rate.

HARNESS TWINE.

Harness twine is also known as harness cotton and as heddle yarn. In England it is usually called "heald yarn."

Harness twine is used to make the heddles or healds of loom harness. An open eye, for the passage of a warp thread, is tied in the middle of each heddle length, and the heddles are fastened at top and bottom to the loom harness frame. The completed heddles are varnished before they are used on the loom. The chief function of the loom harnesses with their constituent heddles is to govern the particular order in which the warp threads shall be laid side by side and interwoven with the filling to form a weave or design. While the loom harness business as a whole is comparatively small, it is very important as no piece of cloth of any kind can be woven without a harness.

Although for many classes of weaving there is steadily increasing competition from steel heddles, it is estimated by the trade that fully two-thirds of American looms of all kinds are equipped with twine. The annual consumption of harness twine in the United States is estimated by one of the largest supply houses at from 300,000 to 400,000 pounds. This twine is for the most part, spun and twisted in this country, and the work is confined almost entirely to three mills.

The imports of harness twine range between 25,000 and 60,000 pounds a year and consist mainly of counts finer than those customarily made in this country. The main counts imported are 130/9 and 140/9; other counts such as 150/9, 120/9, and 98/12 follow in the order named. Occasionally there are small imports as fine as 200/9. These fine harness twines are mainly for use in the silk industry, for making harnesses for ribbon or broad-silk looms where the warp is of skein-dyed silk. About 5 per cent of the total is polished before import. Polished twines last longer than unpolished, and are made into "French" harnesses. The unpolished twines are made into "English" harnesses. Imported harness twines are all cabled yarns in 6, 9, or 12 ply. The 6 cord is made 2 by 3 ply, the 9 cord is 3 by 3 ply, and the 12 cord is 4 by 3 ply. Some of the coarser sizes, imported for special work, come more directly into competition with the domestic product. The importation of these sizes, which range from 30/12 up to 78/12, is, however, very limited, as almost their only use is to govern selvage threads. Occasionally yarn invoiced as "one-throw gray heald" is imported in small quantities. This is unfinished harness twine in 2, 3, or 4 ply which has gone through the first doubling but which has not been cabled.

Harness twines must be firm, tough, smooth, and round. They are made of long-stapled cottons. For the fine twines that constitute the greater part of American imports in this line sea-island cotton is normally used but, owing to the British restrictions on exports of sea-island yarns, Egyptian (Sakellarides) cotton was used for a good portion of the 130/9 and 140/9 imported in 1918. The finer yarns are usually combed, but some imports as fine as 140/9 are invoiced as "gray cdd. plain sup. spec. X reel cable laid."

The manufacture of harness twine requires skill and experience, and in the manufacture of the finer twines England has a practical monopoly. British operatives work for years before they attain the ability to make perfect twines; in this country employers complain that operatives desert this intricate work as soon as they find more congenial employment. A leading importer states:

> Harness twines are imported on account of their superior quality only, and not on account of a lower price. It is a matter of fact that American cotton spinners have repeatedly tried to imitate the imported twine and have never succeeded. Either their twines were unevenly twisted, or they did not balance in twist, they snarled up, or the single was unevenly spun so that the twine showed corkscrew effects instead of being round and even in twisting and doubling. Often all these defects combined showed in the twine.

The harness twines used in the United States are for the most part made here and have proved entirely satisfactory, but there will probably continue to be a small import of the fine twines, in counts above 98s, required for harnesses in weaving thrown-silk and other special goods. Such twines are imported because of their superior quality and the fact that the amounts needed of the various fine counts are too small to offer inducement to domestic manufacturers to attempt this end of the trade.

Harness twine is dutiable under paragraph 250 of the 1913 tariff as cotton yarn. Paragraph 262 makes provision for "loom harness, healds, and collets" which are finished articles. Healds, in this country more commonly known as heddles, are made of harness twine cut to length and with knotted eyes or openings for the passage of warp threads. Loom harness is the finished harness ready for use on the loom; it consists of a flat frame with a number of healds or heddles stretched thereon side by side. Collets, also mentioned in paragraph 262, are not usually made of cotton but are flax cords used to hold the loom harness in position on the loom.

Imports of harness twine originate mainly at Manchester and enter at New York. Some doublers export under their own name and two or three silk mills import harness twine direct, but most of this trade is handled by yarn dealers at Manchester and at New York.

Imports of harness twine, by counts and sources.

Count.	1914	1918	Invoiced from.	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
30/12	1,325	642	Manchester	46,534	25,153
38/6	4,000	....	Stockport	4,800	....
78/12	1,377	....	Thalwil	1,236	....
98/9	1,447	461	Others	2,657	422
98/12	900	1,180			
110/9	2,020	355			
120/9	3,858	1,500			
130/2	1,972	....			
130/9	11,219	10,226			
140/9	11,319	4,592			
150/9	2,940	2,985			
160/9	2,277	....			
160/12	1,251	....			
180/12	1,120	....			
Others	8,202	3,634			
Total	55,227	25,575	**Total**	55,227	25,575

CHARACTER AND USES OF IMPORTED COTTON YARNS—GENERAL TABLES

Chapter IV.

CHARACTER AND USES OF IMPORTED COTTON YARNS; GENERAL TABLES.

As shown by special investigation of 91.2 per cent of 1914 and 92 per cent of 1918 imports for consumption.

INTRODUCTION.

This chapter supplements Chapter III in setting forth the results obtained from a detailed investigation of 91.2 per cent of the 1914 and 92 per cent of the 1918 imports for consumption of cotton yarn. Discussion of the individual industries consuming the different kinds of yarn is confined to the preceding chapter, while the more inclusive general tables and discussion thereof follow in this chapter.

It should be borne in mind that the figures in Chapters III and IV relate entirely to 91.2 per cent of the 1914 and 92 per cent of the 1918 imports for consumption and therefore that the totals given will not check up exactly with the published totals of imports for consumption shown in Chapter II. The only exception is Table 10, which is inserted for two purposes: first, to compare imports by individual yarn counts and by yarn ranges in the fiscal years 1898, 1908, and 1918, so far as obtainable, and second, to show within what yarn ranges fall the amounts of yarn for which it was impossible to obtain figures by individual yarn counts.

Table 10.—*Individual counts of cotton yarn imported for consumption (in pounds).*

Count.	1898	1908	1918
Under 21	153,285	706,721	70,421
21	473	....	....
22	2,766	43,865	36
23	162	539	....
24	38,511	140,433	....
25	11,267	65,561	23,937
26	41,289	21,534	....
27	10,874	47,912	666
28	7,834	37,023	....
29	30	4,356	....
30	86,708	322,291	35,152
31	15	212	....
32	5,665	21,972	....
33	2,677	7,184	2,119
34	121	61,442	....
35	7,763	37,681	3,793
36	12,854	330,450	23,024
37	14	200	....
38	46,264	77,152	29,782
39	1,920	454	47,972
Unknown	....	....	55,274
Up to 39	430,492	1,926,982	292,176
40	132,041	687,453	14,107
41	5	15,308	....
42	674	6,195	....
43	12	455	....
44	949	32,798	5,196
45	12,461	63,887	580
46	61	21,524	....
47	....	22,239	....
48	....	41,911	128,105
49	3	322	32,718
Unknown	....	....	29,065
40 to 49	146,206	892,092	209,771
50	110,224	260,016	12,219
52	313	39	....
53	....	984	....
54	100	6,651	....
55	51,446	102,884	5,892
56	....	515	....
57	....	19,887	....
58	7,572	444,118	560,275
59	....	365	41,624
Unknown	....	....	79,475
50 to 59	169,655	835,459	699,485
60	165,060	1,051,489	1,370
64	2,002	86	[illegible]
65	3,950	30,239	[illegible]

TABLE 10.—*Individual counts of cotton yarn imported for consumption (in pounds)*—Continued.

Count.	1898	1908	1918
66		51,928	23,243
67	4		
68		485,305	267,782
70	262,342	318,260	426,093
71	500		
72		790	
73		910	
74	3,100	2,750	
75	16,943	54,557	5,743
76	30,796	96,244	10,392
77		574	
78	140,485	548,193	1,158,550
79	585	27,567	18,000
Unknown			12,987
60 to 79	625,767	2,668,892	1,940,471
80	35,698	31,335	76,686
82		268	
84		2,644	
86	2,565		
88		236	606
90	27,804	41,280	41,211
92		321	
93		162	
94		84	
95	26,997	17,547	5,500
96		3,294	176,811
97			301,441
98	176	10,504	585,842
99			6,000
Unknown			134,669
80 to 99	93,240	107,675	1,328,766
100	144,234	254,559	
105	140	1,188	
107	2		
108	256	10	
110	8,904	53,952	30,520
112			13,050
114		9,772	
115	2,296	7,265	36,094
116			4,614
117			46,171
118			4,854
120	46,973	115,858	372,687
125	239	608	
129	50		
130	3,883	14,179	17,304
135	2,839	112	
138		13,544	38,975
140	18,188	53,992	448,984
143			2,050
145	3,162	290	
150	4,525	3,795	8,489
160	4,524	36,614	21,391
168	2,116		
170	93	5,219	
180	1,973	11,012	19,379
190	66	383	600
195			1,040
200	992	247	5,419
220		490	1,541
240		13	
250		15	
256	95		
270		20	
Unknown	32,041		143,810
Above 99	277,591	583,137	1,216,972
Total	1,742,951	7,014,237	5,687,641

Table 10 shows by individual count all of the imports for consumption, 1,742,951 pounds, as officially recorded for 1898, with the exception of 32,041 pounds. This amount, which is only 1.84 per cent of the total, was imported under the tariff act of 1894, which was in force the first 23 days of the fiscal year 1898; it was in the main "valued at over 40 cents a pound" and no yarn count was stated. For 1908 it is possible to show from the records the entire total of 7,014,237 pounds by individual yarn counts. For 1918 the official statistics show imports by yarn ranges only, no record having been kept of individual yarn counts. The special investigation made by the Tariff Commission disclosed invoices, readily available, amounting to 5,232,360 pounds of cotton yarn. This is 92 per cent of the officially recorded total of 5,687,641 pounds, leaving 455,281 pounds or 8 per cent for which invoice details were not obtained. Table 9 enables one to see at a glance what portions of this 455,281 pounds fell within each yarn range. Warehouse records and other data indicate that the largest amounts unascertained were probably of 97s, 98s, and 117s electrical yarns, followed by 120s, 58s, and 39s.

As the amounts for which individual counts were ascertained constituted *98.2 per cent* in 1898, 100 per cent in 1908, and 92 per cent in 1918, it is practicable to gauge the quantities of each yarn count imported with but small margin of possible error. In 1898, cotton prices were exceptionally low, in 1908 prices were lower than usual, whereas in 1918 prices of cotton attained high-water mark. With all the drawbacks incident to comparing single years instead of ranges of years, the only accurate method, the trend in 1898, 1908, and 1918 toward the importation of a larger proportion of fine counts is clear and marked. Without going into a comparison of the amounts imported of the various counts, it may be noted that the main count imported in 1898 was 70s, in 1908 it was 60s, and in 1918 it was 78s, all falling within the 60–79s range, which has long been the main competitive range.

DISCUSSION OF GENERAL TABLES.

IMPORTS OF COTTON YARN ACCORDING TO COUNT AND PLY.

In 1913, before a subcommittee of the Senate Finance Committee, the president of the American Cotton Manufacturers' Association stated:

> Up to 1910, inclusive, the importations of these yarns were kept by individual numbers, and it was easy to see the value of the importations of each count, its ad valorem, invoice value, and all about it. Since then they have been kept by groups of ten, which tell us nothing. If it is in order, I would suggest that some steps be taken to see that the practice up to 1910 be continued, because we could tell the values of those yarns but we can not do so now.

This request was kept in mind when a study of the imports in 1914 and 1918 was undertaken. For most of the trade in those years not only the count but also the ply is shown, as well as many other details never hitherto analyzed. It was, however, found impracticable to show values in such detail, largely because invoice values were in many instances raised on customs valuation. This was especially noticeable in the fiscal year 1918, when many firms that had contracts throughout the calendar year 1917 at fixed prices had their invoice values raised by customs authorities to correspond with the prices ruling at the time of export. To correlate such prices was found too difficult, particularly as some prices were again revised on protest, and corrections made which it was difficult to follow through.

In Chapter III there was included in the discussion of the kind of yarns imported for each consuming industry a brief tabular statement of the main counts, usually those weighing 5,000 pounds or more, imported for that industry. It has been deemed of value to have, in spite of some repetition, tables that will show a complete consecutive list of the counts and plies imported in the years studied. Tables 11 and 11a herewith presented furnish comparative data as to the total amounts and the proportions of the different counts and plies *taken by each* consuming industry in 1914 and 1918.

TABLE 11.—*Imports for consumption of cotton yarn in 1914 (in pounds).*

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
1/1	282					282				
1¼/2	1,017							1,017		
1½/1	252					252				
1½/2	341							341		
2/1	1,434			1,014		420				
2/2	340							340		
3/1	1,134					52		1,082		
3/2	26,270							26,270		
4/2	121							121		
4/4	1,206			1,206						
5/2	29,038							29,038		
6/1	69,975					67,455		2,520		
6/2	656							656		
6/4	1,044			1,044						
8/1	53,745			43,187		10,553		5		
8/2	10,328					1,594		8,734		
8/3	777							777		
8/4	2,001			2,001						
9/2	20,114							20,114		
9½/2	681							681		
10/1	31,405			15,532		15,873				
10/2	1,703					575		1,128		
10/4	2,907			2,907						
11/1	109								109	
12/1	31,329			10		31,319				
12/2	2,550					2,400	150			
12/4	3,950			3,950						
14/1	19,942					19,942				
14/2	14,942					14,942				
14/4	2,403			2,403						
15/1	6,452			271		6,181				
15/2	139							139		
16/1	127,274	817				125,119	940	398		
16/2	2,148							2,148		
16/4	2,105			2,014				91		
18/1	4,115					4,115				
18/2	65							65		
18/4	1,398			1,398						
19/1	3,986			212		3,774				
19/2	618			560				58		
19/9	11,029			11,029						
20/1	14,751					13,624	800		327	
20/2	40,073	1,249				36,697	706	1,421		
20/3	1,098							1,098		
20/4	2,403			1,297				1,106		
21/1	1,211					409	802			
22/1	630						302		328	
22/4	1,288			778				510		
24/1	14,421			1,066		7,277	5,290	109	679	
24/2	667					20	647			
24/3	3,750							3,750		
24/4	823			823						
25/1	3,576					1,256	2,320			
25/2	12,684						12,684			
26/1	15,870			10,800		5,060			10	
26/2	4,155			100			4,055			
26/4	339			339						
27/1	1,750						1,000	750		
28/1	14,267			12,500		943	200		624	
28/2	3,372					99	2,759		514	
28/3	503		503							
28/4	168			168						
29/2	277							277		
30/1	97,724		1,081	24,448		26,051	46,098	46		
30/2	55,350	558		3,301		7,524	22,260	21,707		
30/3	12,036		10,900						1,136	
30/4	4,698			181				4,517		
30/5	241							241		
30/12	1,325									1,325
30/15	150						150			
32/1	3,004	250		470		421	1,300		563	
32/2	1,293			695			50	284	264	
33/1	133			133						
33/4	5,100							5,100		
34/1	1,574			1,574						
34/2	324			324						
34/3	224								224	
35/1	13,058			7,450		1,685	3,923			
35/2	8,018			236		150	7,632			
36/1	88,703					52,437	35,533		733	

TABLE 11.—*Imports for consumption of cotton yarn in 1914 (in pounds)*—Continued.

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
36/2	34,723			4,423		17,941	294	12,065		
36/3	11,428								11,428	
36/4	3,177					61		3,116		
36/8	600							600		
37/2	95							95		
38/1	72,657		20,100	8,207		10,628	33,722			
38/2	110,172	250	2,414	18,645		56,890	7,008	24,965		
38/3	8,975		1,421						7,554	
38/4	1,644						1,025	619		
38/6	4,000									4,000
39/1	39,834					17,473	22,361			
39/2	192,285	10,333		14,540		145,341	2,410	19,661		
39/3	17,305		800						16,505	
39/4	8,582						7,420	1,162		
40/1	67,947		18,122	5,601		7,724	35,756		744	
40/2	44,351	469		10,551		326	6,307	26,698		
40/3	18,647							1,026	17,621	
40/4	4,160						1,169	2,991		
40/5	490							490		
40/6	110									110
40/7	350							350		
40/12	295									295
41/2	3,659			3,630		29				
41/3	658								658	
42/1	1,360			1,360						
42/4	568							568		
43/1	243					243				
43/2	8,569			8,569						
43/3	4,627								4,627	
44/1	118					118				
44/6	500						500			
44/8	222							222		
45/1	1,124					824	300			
45/2	4,813	1,052		2,718		1,000	43			
45/3	32,374			1,009					31,365	
46/2	33,588						217	33,371		
46/6	280						280			
47/1	8					8				
47/2	5,248			4,572			8	668		
47/7	232							232		
48/1	7,011					7,011				
48/2	79,813	19,700	70	26,412		20,329	3,695	8,829	778	
48/3	11,435			956					10,479	
48/4	37,740						26,314	11,426		
48/7	2,215							2,215		
48/8	232							232		
48/12	194									194
49/1	7,045					4,845	2,200			
49/2	20,167			7,191			1,350	11,626		
49/3	1,845								1,845	
49/4	14,588						14,588			
50/1	7,682			157		6,359	527		639	
50/2	47,420			29,851		5,592	4,648	7,329		
50/3	2,877								2,877	
50/4	11,472						7,382	4,090		
50/5	3,151							3,151		
50/6	246									246
50/7	1,250							1,250		
50/12	795									795
52/2	278			278						
54/1	441					441				
54/2	4,291					2,727		1,564		
55/1	31,016					31,016				
55/2	2,058			259			767	1,032		
55/3	1,203								1,203	
55/4	1,452						1,377	75		
56/2	1,005			1,005						
57/2	9,023			9,023						
58/1	5,485			5,033	145	307				
58/2	627,432	222,800	516	94,227		211,461	8,846	89,582		
58/3	17,576		2,390						15,186	
58/4	10,037						9,644			393
58/6	800									800
58/8	778							778		
58/12	268									268
59/1	1,123		707	229		187				
59/2	129,367	77,000	6,773	8,613		19,662	1,515	15,804		
59/3	600		600							
59/4	1,986						1,986			
60/1	6,502		1,818	1,313		2,137	500		734	

TABLE 11.—*Imports for consumption of cotton yarn in 1914 (in pounds)*—Continued.

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
60/2	317,372	113,150	3,998	52,757		53,485	14,918	79,064		
60/3	1,635	250	507					24	854	
60/4	3,634						1,801	1,523		310
60/5	2,312							2,312		
60/12	130									130
62/2	2,393			2,393						
64/2	7,218			7,218						
65/1	4,531					15	4,516			
65/2	112							112		
66/1	635						635			
68/1	1,384		1,255	129						
68/2	351,251	343,567		2,896		3,200		1,588		
69/1	751			751						
69/2	298			254				44		
69/4	3,814						3,814			
70/1	187,002		169,373	9,775		6,263	1,591			
70/2	169,778	123,562	1,773	24,472		17,882	2,089			
70/3	1,740					1,202		25	513	
70/4	9,990					150	9,840			
70/5	1,178							1,178		
71/1	2,600		2,600							
72/2	500	500								
72/4	201									201
75/2	20,419			11,857		7,562	1,000			
76/2	98,833	1,000		92,275		4,494	280	784		
76/3	1,885								1,885	
78/1	13,338		2,459	6,673			4,206			
78/2	630,301	181,594	110,788	110,135		191,080	23,499	13,205		
78/3	16,254	8,600	671	6,441		312			230	
78/4	2,594						2,280	314		
78/6	111									111
78/12	1,377									1,377
79/2	56,206			5,397		50,725	40	44		
80/1	1,680			821	859					
80/2	5.893			250		5,110	233	256	44	
80/3	25			25						
80/4	1,320						280	1,040		
80/5	3,199							3,199		
80/12	100									100
84/3	11			11						
84/4	1,200							1,200		
85/1	66		51	15						
86/2	526			526						
86/5	90							90		
88/2	1,087			1,087						
88/3	634								634	
90/1	3,451		2,411	1,015		25				
90/2	41,710			26,284		15,426				
90/3	2,561			849				1,660	52	
90/5	862							862		
90/6	100									100
90/9	570									570
94/4	1,400							1,400		
95/1	232		232							
95/2	529			529						
96/1	440			440						
96/2	46,968			15,341		31,627				
96/3	300								300	
98/1	1,022				1,022					
98/2	329.431	43,850	126,550	89,048		53,820	12.551	3,612		
98/3	748		500	248						
98/6	50									50
98/9	1.447									1,447
98/12	900									900
99/2	41.141	6,330	1,053	6,770		26,688	300			
99/3	742								742	
100/1	995				995					
100/2	93,899	2,000	42,475	14,341		34,610	18	455		
100/3	2.119					1,893		226		
100/4	970							970		
100/5	1,444							1,444		
100/6	50									50
100/9	500									500
100/12	900									900
108/2	790		790							
110/1	354					354				
110/2	39.459		190	1,638		35,719	1,912			
110/3	42							42		
110/5	50							50		
110/9	2,020									2,020

TABLE 11.—*Imports for consumption of cotton yarn in 1914 (in pounds)*—Continued.

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
112/2	281			281						
115/2	14,499		3,031	5,324		6,144				
117/1	8,058				8,058					
117/2	2,339					2,320	19			
118/2	1,104			975		129				
120/1	7,269		854	75	1,131	5,209				
120/2	377,512		180,192	95,954		94,708	4,019	2,639		
129/3	3,415		250			2,625		540		
120/5	794							794		
129/9	3,858									3,858
120/12	450									450
125/9	387			387						
130/2	5,786			377			3,437			1,972
139/9	11,219									11,219
135/2	9,870		5,560	55		4,255				
138/2	21,600		500				21,100			
140/1	546		500		46					
140/2	274,836		224,509	26,656		5,642	15,154	2,875		
140/3	1,308							688	620	
140/5	139							139		
140/9	11,319									11,319
140/12	800									800
145/2	1,647		309	1,338						
150/2	13,600		9,999	2,380		1,114	107			
150/3	595							595		
150/9	2,940									2,940
150/12	230									230
155/2	503		503							
160/2	34,655		34,225				430			
160/3	19		19							
160/9	2,277									2,277
160/12	1,251									1,251
170/2	599		550							49
170/12	103									103
175/2	233		233							
180/2	62,720		60,481			1,348	891			
180/5	95							95		
180/9	236									236
180/12	1,120									1,120
190/2	6,507		5,580				927			
200/2	26,107		24,048	209			1,850			
200/3	200					200				
200/12	211									211
210/2	1,870		1,870							
220/2	10,852		10,852							
240/3	5		5							
250/2	152		152							
260/2	3,234		3,234							
	6,247,427	1,158,881	1,103,347	1,050,465	12,256	1,694,517	487,497	549,609	135,628	55,227

Table 11a.—*Imports for consumption of cotton yarn in 1918 (in pounds).*

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
6/1	4,000					4,000				
8/1	1,633					1,633				
8/2	541							541		
12/1	1,500					1,500				
12/2	30						30			
14/1	1,000					1,000				
16/2	534							534		
18/1	36					36				
19/2	8,545	4,095				4,450				
20/1	457			457						
20/2	52,145					51,500	645			
22/1	36					36				
25/2	23,937						23,937			
27/4	666							666		
30/1	6,270						6,270			
30/2	12,202						12,202			
30/3	15,440		15,440							
30/4	598							598		
30/12	642									642
33/4	2,119							2,119		
35/1	2,343						2,343			
35/2	1,450						1,450			
36/1	11,442					2,384	9,058			
36/2	9,980						9,980			
36/3	900								900	
36/4	702							702		
38/1	23,177		1,406			10,104	11,667			
38/2	6,605			3,584		1,483	1,205	333		
39/1	8,460						8,460			
39/2	33,732	7,500		750			25,482			
39/3	3,000								3,000	
39/4	2,516						2,516			
39/12	264									264
40/1	8,626		583			7,943	100			
40/2	1,191			688		503				
40/3	4,090								4,090	
40/4	200							200		
44/1	18						18			
44/2	3,378			3,378						
44/3	1,800								1,800	
45/2	84			84						
45/3	496								496	
48/1	4,132								4,132	
48/2	123,973	109,200	378	2,690		4,283	525	6,840	57	
49/1	1,020								1,020	
49/2	18,332			5,412		500			12,420	
49/3	6,923								6,923	
49/4	5,543						4,143		1,400	
49/6	300									300
49/12	600									600
50/1	2,460		300			2,160				
50/2	1,000	1,000								
50/3	8,459								8,459	
50/4	300							300		
55/1	3,629					3,629				
55/3	2,263								2,263	
58/1	6,103		731	3,793	293	1,286				
58/2	547,844	405,850	55,376	16,879		14,466	21,275	31,438	2,560	
58/3	6,328	1,600	3,834	894						
59/2	27,926	4,500		7,768		12,000	700		2,958	
59/3	4,357		1,100						3,257	
59/4	8,841						6,572		2,269	
59/12	500									500
60/1	308			208			100			
60/2	362						362			
60/3	300								300	
60/4	400							400		
64/1	16,252					16,252				
65/3	59								59	
66/1	23,243					10,813	12,430			
68/1	1,153			1,153						
68/2	266,629	257,050	5,961	3,618						
70/1	65,292	1,000	54,788	3,351			6,153			
70/2	345,514	336,200		7,104			1,310	900		
70/3	6,888	500							6,388	
70/4	8,399						8,399			
75/2	5,743			4,751		992				
76/2	9,312			853		8,459				
76/3	1,080					873			207	
78/1	574,422			495,390	74,080		4,952			

TABLE 11a.—*Imports for consumption of cotton yarn in 1918 (in pounds)*—Continued.

Yarn count.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
78/2	571,136	248,000	82,275	45,758		155,735	18,198	21,170		
78/3	12,946		4,997	771		3,195			3,983	
78/9	46									46
79/1	6,200			6,200						
79/2	11,800			3,200		8,600				
80/1	76,029			76,029						
80/3	557								557	
80/4	100							100		
88/2	606					606				
90/1	25,446		5,101	20,345						
90/2	14,610			10,852		3,758				
90/3	823			823						
90/9	332									332
95/2	5,500		5,500							
96/2	176,811					176,811				
97/1	301,441				301,441					
98/1	231,463			49,634	181,829					
98/2	350,720	48,600	108,307	76,277		103,410	5,505	8,621		
98/3	1,998		1,000			998				
98/4	20					20				
98/9	461									461
98/12	1,180									1,180
99/2	6,000			1,000		5,000				
110/1	4,897				4,697	200				
110/2	25,248					25,248				
110/4	20					20				
110/9	355									355
112/2	13,050		13,050							
115/2	36,094			3,994		32,100				
116/1	4,614				4,614					
117/1	14,324				14,324					
117/2	31,847			5,332		26,515				
118/1	1,394				1,394					
118/2	3,460					3,460				
120/1	62,656				45,797	16,859				
120/2	307,570		107,887	20,332		143,763	10,480	25,108		
120/3	761		300					461		
120/9	1,500									1,500
120/12	200									200
130/2	7,078		315				6,763			
130/9	10,226									10,226
138/2	38,975						38,975			
140/1	21,588				21,588					
140/2	422,012		298,382	23,993		88,409	11,228			
140/9	4,592									4,592
140/12	792									792
143/2	2,050		2,050							
150/2	4,904		4,210	94		600				
150/9	2,985									2,985
150/12	600									600
160/1	830				830					
160/2	20,551		18,921			700	930			
160/3	10		10							
180/1	541				541					
180/2	18,838		18,638			200				
190/2	600						600			
195/2	1,040		1,040							
200/1	459				459					
200/2	4,960		4,960							
220/2	1,540		1,540							
	5,232,360	1,425,095	818,380	907,439	651,887	958,492	274,963	101,031	69,498	25,575

Examination of these tables discloses the fact that by 1918 there had been eliminated a large number of the counts and plies that were imported in 1914. This is particularly true of the lower counts, and is due not only to the stoppage of imports from the Continent during the war, but also to the higher relative prices abroad which made it impracticable in 1918 to import yarns for which a domestic substitute was available. If the inquiry had been confined to the calendar instead of the fiscal year 1918 this would have been even more noticeable, as after the calendar year 1917 imports, aside from some yarns on contract, were largely confined to fine counts and to a few specialties, neither of which could be readily obtained in this country. In 1914 imports of 288 separate counts or plies of cotton yarn were listed, whereas in 1918 there are only 140. The weaving, hosiery, and embroidery industries are the main ones that found themselves able to dispense with imported yarns.

From the basic Tables 11 and 11a data have been compiled to bring out in more concise form the main counts imported, the consuming industries most interested in each yarn range as outlined in the tariff law, and the requirements in regard to ply.

Yarn counts imported.—Considering first imports according to count only, regardless of whether single or ply, we find that the most important counts, those in which the import amounted to as much as 100,000 pounds in either 1914 or 1918, were as follows:

Yarn count.	1914	1918	Yarn count.	1914	1918
	Pounds.	*Pounds.*		*Pounds.*	*Pounds.*
16	131,527	534	96	47,708	176,811
30	171,524	35,152	97	....	301,441
36	138,631	23,024	98	333,598	585,842
38	197,448	29,782	100	100,877	....
39	258,006	47,972	120	393,298	372,687
40	136,350	14,107	140	288,948	448,984
48	138,640	128,105			
58	662,376	560,275	Total	4,950,608	4,630,527
59	133,076	41,624	Others listed	1,296,819	601,833
60	331,585	1,370			
68	352,635	267,782	Table total	6,247,427	5,232,360
70	369,688	426,093	Not ascertained	605,808	455,281
76	100,718	10,392			
78	663,975	1,158,550	Official total	6,853,235	5,687,641

It is seen that 78s was the main count imported in both 1914 and 1918, though it is more prominent in 1918 when its import almost doubled in contrast to the decline in the total import and in the imports of many other leading counts. In 1914, 58s ranked second, in fact, considering 58s, 59s, and 60s interchangeable, as they are, the 58s group really ranked first and the 78s group second. In 1918 the 78s group, including 79s and 80s as variations, far exceeded all others and the 98s ranked second.

The leading counts imported in 1914 and 1918, in order of relative amounts imported, compare with the leading counts imported during the 10-year period 1901–1910 as follows:

Rank	1	2	3	4	5	6	7	8	9	10
1901–1910	60s	40s	70s	78s	58s	68s	30s	36s	50s	100s.
1914	78s	58s	120s	70s	68s	98s	60s	140s	39s	38s.
1918	78s	98s	58s	140s	70s	120s	97s	68s	96s	48s.

In the 1901–1910 average, 40s, 30s, and 36s were among the leading counts; in 1914, 39s and 38s ranked ninth and tenth, respectively; in 1918, 48s was the lowest count so included and it ranked tenth in order of weight. This is significant of the trend toward finer counts, and of the difficulty that foreign coarse and medium counts have in competing against domestic yarns.

The range between 60s and 79s has always, so far as can be ascertained, been the main "active sector" between foreign and domestic yarns. Although 60s, was for a long time the main point of contact 78s has now taken its place and 60s, including its substitutes 58s and 59s, has been relegated to third place, coming after 98s.

Tables 11 and 11a are here condensed to show more concisely the consuming industries interested in each range of yarn imports, and, conversely, the yarn ranges in which each industry is most interested.

Cotton yarn imports, by yarn range and consuming industry (in pounds).

Yarn range.	Total.	Curtains.	Lace and bobbinet.	Knit goods.	Electrical.	Cloths.	Narrow wares.	Embroidery.	Thread making.	Harness twine.
1914.										
1-9	220,075	....	....	48,452	....	80,608	....	91,015	....	....
10-19	271,250	817	....	40,286	....	224,240	1,090	4,708	109	....
20-39	936,508	12,640	37,219	112,498	....	401,987	222,751	103,199	40,889	5,325
40-49	416,826	21,221	18,192	72,569	....	42,457	92,727	100,944	68,117	599
50-59	921,112	299,800	10,986	148,675	145	277,752	36,692	124,655	19,905	2,502
60-79	1,918,279	772,223	295,242	334,736	....	338,507	71,009	100,217	4,216	2,129
80-99	490,435	50,180	130,797	143,259	1,881	132,696	13,364	13,319	1,772	3,167
Over 99	1,072,942	2,000	610,911	149,990	10,230	196,270	49,864	11,552	620	41,505
Total	6,247,427	1,158,881	1,103,347	1,050,465	12,256	1,694,517	487,497	549,609	135,628	55,227
1918.										
1-9	6,174	....	....	....	....	5,633	....	541	....	....
10-19	11,645	4,095	....	....	....	6,986	30	534	....	....
20-39	219,083	7,500	16,846	4,791	....	65,507	115,215	4,418	3,900	906
40-49	180,706	109,200	961	12,252	....	13,229	4,786	7,040	32,338	900
50-59	620,010	412,950	61,341	29,334	293	33,541	28,547	31,738	21,766	500
60-79	1,927,484	842,750	148,021	572,357	74,080	204,919	51,904	22,470	10,937	46
80-99	1,194,097	48,600	119,908	234,960	483,270	290,603	5,505	8,721	557	1,973
Over 99	1,073,161	....	471,303	53,745	94,244	338,074	68,976	25,569	....	21,250
Total	5,232,360	1,425,095	818,380	907,439	651,887	958,492	274,963	101,031	69,498	25,575

The foregoing tables enable one to see at a glance the consuming industries entitled to a hearing when changes in the tariff rates on any particular yarn range are under consideration. The main counts in each range used by the various consuming industries are also of interest, particularly in considering the effect of a different demarcation of yarn counts. For convenience in following, these are outlined below.

In the very coarse counts, up to 9s, there was practically no import in 1918; in 1914 the embroidery industry bought 3/2, 5/2, and 9/2, the towel industry 6/1 and 8/1, and the knitting industry 8/1.

In the coarse range, from 10s to 19s, there were again almost no *imports in 1918. In 1914* the silk industry required large amounts of 16/1; the towel industry bought 10/1, 12/1, and 14/1, and the knitting industry, 10/1 and 19/9.

In the medium range, from 20s to 39s, the main counts required by the principal consuming industries were as follows in 1914: Silk weaving, 20/1, 36/1, 36/2, 39/1, 39/2; cotton-cloth weaving, 38/2 and 39/2; towel weaving, 20/2; worsted weaving, 30/1; polished yarns, 30/1, 36/1, 38/1, and 39/1; hatband weaving, 25/2 and 30/2; knitting, 26/1, 28/1, 30/1, 38/2, and 39/2; embroidering, 30/2, 36/2, 38/2, 39/2; thread making, 36/3 and 39/3; lace making, 30/3 and 38/1; and curtain making, 39/2. In 1918 hatband manufacturers bought 25/2, 30/2, 39/2; towel weavers, 20/2; cotton-cloth weavers, 38/1; and lace makers, 30/3.

In the medium fine range, from 40s to 49s, the 1914 trade may be outlined as follows: The embroidery industry bought 40/2, 46/2, 48/4, and 49/2; the knit-goods industry, 40/2 and 48/2; thread makers, 40/3, 45/3, and 48/3; shoe-lace makers, 40/1 polished yarns; hatband weavers, 48/4 and 49/4; fancy-lace makers, 40/1; and curtain makers, 48/2. In 1918 the curtain industry was the main user of 48/2, and thread makers of 49/2.

In the medium fine range, from 50s to 59s, the main user in 1914 was the curtain industry which required 58/2 and 59/2; in addition, the silk industry bought 58/2; the velvet industry, 59/2; the knitting industry, 50/2 and 58/2; the embroidery industry, 58/2 and 59/2; thread makers, 58/3; and mohair weavers, 55/1. In 1918 the main user was again the curtain industry, with 58/2; the lace, embroidery, knitting, and ribbon weaving industries also bought more or less 58/2.

In the fine range, from 60s to 79s—the main competitive range—the lace-curtain industry ranks as main buyer. In 1914 the curtain industry bought 60/2, 68/2, 70/2, and 78/2; the knitting industry took 60/2, 70/1, 70/2, 75/2, 76/2, 78/2; lace makers, 70/1 D. S. and 78/2; cotton-cloth weavers, 60/2 and 78/2; silk weavers, 70/2 and 78/2; velvet weavers, 60/2, 78/2, 79/2; ribbon weavers, 78/2; embroiderers 60/2, 78/2. In 1918 the curtain industry predominated with large purchases of 68/2, 70/2, and 78/2; the knit-goods industry bought 78/1, 78/2; the lace industry, 70/1 D. S. and 78/2; cotton-cloth weavers bought 64/1, 66/1, 78/2; silk, velvet, and mohair weavers also used 78/2, as did the embroidery and the ribbon industries; the woven label industry used 66/1; the electrical industry bought 78/1, whereas the glove industry used large amounts of 78/1 and also some 79/1.

In the fine range, from 80s to 99s, the knit-goods industry led in 1914, using mainly 90/2, 96/2, and 98/2; the lace and lace-curtain industries took 98/2, as also did the cotton cloth, silk, and ribbon industries; the velvet industry bought 99/2; the voile weavers, 96/2; and mohair weavers, 90/2. In 1918 voile yarns were imported in 96/2 and 98/2; the silk industry bought the same counts but of a very different nature; 98/2 was imported for velvets, for cotton cloth, for lace, for curtains, and for knit-goods; 80/1, 90/1, and 98/1 were required for glove knitting, and 97/1 and 98/1 for electrical-wire coverings.

In the range of very fine yarns above 99s the lace industry predominates. In 1914 the lace industry bought 100/2, 120/2, 140/2, 160/2, 180/2, 200/2, and 220/2; knitters bought 100/2, 120/2, 140/2; voile weavers, 100/2; other cotton-cloth weavers, 120/2; silk weavers, 110/2 and 120/2; worsted weavers, 120/1; mohair weavers, 110/2 and 120/2; and velvet weavers, 120/2; hatband makers used 138/2, label makers, 140/2; harness twine was imported in 130/9 and 140/9. In 1918 the lace industry led with 112/2, 120/2, 140/2, 160/2, and 180/2; knitters bought 120/2 and 140/2; electrical yarns were imported in 117/1, 120/1, 140/1; 140/2 was imported for voile, and 120/2 for other cotton cloth; 115/2, 117/2, and 120/2 for silk weaving; 120/2 for velvet; 120/1 for worsted; and 110/2 and 120/2 for mohair weaving; hatband and woven label manufacturers purchased 138/2; ribbon weavers 120/2, and embroidery manufacturers 120/2; the main harness twine imported was 130/9.

Single and ply yarns.—Imports of single and of ply yarns in 1914 and 1918 were as follows:

Single or ply.	1914	1918
	Pounds.	*Pounds.*
Single	1,106,056	1,518,894
2-ply	4,722,648	3,577,989
3-ply	182,176	79,478
4-ply	152,362	30,424
5-ply	14,045	....
6-ply	6,247	300
7-ply	4,047	....
8-ply	1,832	....
9-ply	47,415	20,497
12-ply	10,449	4,778
15-ply	150	....
Total	6,247,427	5,232,360

In 1914, 75.6 per cent of the total imports were 2-ply yarns, 17.7 per cent were single, and only 6.7 per cent were multiple-ply; whereas in 1918, 68.4 per cent were 2-ply yarns, 29 per cent were single, and only 2.6 per cent multiple-ply.

Single yarns.—A single yarn is one that has not been doubled, or twisted together, with others.

The 1914 figures above, together with other data, tend to show that normally the import of single yarns is less than a fifth of the total import. In 1914 imports in this line were mainly of 16s to 40s pincops for mixed-silk goods, of 24s to 40s polished yarns, of 6s to 14s Turkey-red yarn for towels, of 8s to 78s for knit underwear and hosiery, of 70s "double spun" for lace, and of 30s to 120s for weaving *with mohair or wool.* The following single counts were imported in

1914 to the extent of more than 50,000 pounds each: 70/1 to the amount of 187,002 pounds, 127,274 pounds of 16/1 and 98,724 pounds of 30/1. These counts were followed by 36/1, 38/1, 6/1, 40/1, and 8/1 in the order named. With the exception of the 70/1 D. S.—a lace specialty—and some 55/1 for mohair weaving, there was before the war no appreciable import of fine single yarns above 40s.

In 1918 the situation was different. There was a great decline in the imports of the coarse and medium singles normally imported. The decrease was due mainly to the higher prices which made it advisable to substitute domestic yarns and partly to the fact that Germany, about half of whose shipments to us had been of yarns in the single, was out of the market. On the other hand there was a great increase in the imports of fine single yarns, because of the new trade in glove and electrical yarns; each of these required over 600,000 pounds so that the total import of single yarns in 1918 was more than that of 1914. In 1918 the main single yarns imported were 78/1, which with 79/1, considered as a variation, amounted to 580,622 pounds; and 97/1, which with 98/1, considered as a variation, amounted to 532,904 pounds; these were followed by 80/1, 70/1, and 120/1.

The following table serves to bring out the main features of the import trade in single yarns of cotton, showing the amounts that were carded and the amounts that were combed, divided according to finish:

Imports of single yarns of cotton, 1914 and 1918 (in pounds).

Finish.	Carded.			Combed.			Totals.
	Gray.	Bleached.	Dyed.	Gray.	Bleached.	Dyed.	
1914.							
Polished	4,058	37,346	135,649	5,079	1,966	1,394	185,492
Mercerized	6,965	519	634	10,177	260		18,555
Gassed	1,542		214	14,208	10		15,974
Prepared	9,040	699			528		10,267
Gassed prepared		989		4,000	3,427	100	8,516
Prepared D. S	2,396	461		61,160	198		64,215
Gassed prepared D. S	30,895	493	720	91,796	907		124,811
Mercerized gassed prepared D. S	1,500						1,500
None specified	195,422	969	176,694	297,800	2,751	3,090	676,726
Total	251,818	41,476	313,911	484,220	10,047	4,584	1,106,056
1918.							
Polished	5,375	5,401	21,564				32,340
Mercerized	417			15,238	2,161		17,816
Prepared		540		100	495		1,135
Gassed prepared	4,597	5,118		14,615	12,350		36,680
Mercerized gassed prepared					250		250
Prepared D. S				7,737			7,737
Gassed prepared D. S				33,236	2,422		35,658
Mercerized prepared D. S				1,032			1,032
None specified	5,577		11,715	1,368,847		107	1,386,246
Total	15,966	11,059	33,279	1,440,805	17,678	107	1,518,894

It is of interest to ascertain what amount of cotton yarn is imported into this country in the condition in which it comes from the spindle, without twisting or bleaching or printing or dyeing, and without being subjected to any special finishing process such as gassing, mercerizing, preparing, or polishing. The foregoing tabulation of the of the imports of single yarns shows that in 1914 there were 195,422 pounds of carded and 297,800 pounds of combed yarns, a total of 493,222 pounds, that could be classed as "unbleached and unfinished." This is only 7.90 per cent of the total import of 6,247,427 pounds of cotton yarns of all kinds reported on in this investigation. In 1918 the proportion was somewhat larger, because of the new trade in glove and electrical yarns, and amounted to 5,577 pounds of carded and 1,368,847 pounds of combed yarns, a total of 1,374,424 pounds. This is 24.16 per cent of the total import of 5,687,641 pounds of cotton yarns of all kinds reported on in this investigation. Cotton yarn as it comes from the spindle is in its cheapest condition, and is entitled to the lowest rate of duty whenever differentials are assessed for increases in cost resulting from additional manipulations. The unbleached unfinished carded yarn is cheaper than the unbleached unfinished combed yarn. Part of the yarn imported was shipped in its primary state on the cop as it came from the mule; part was reeled or coned or otherwise put up. A considerable portion of the single yarn imported for covering electrical wires is imported in the "grouped" state, a number of ends being wound together on to cones with the object of using each group as a unit in future work on the braiding machine.

Imported single yarns, as a rule, come in the gray or unbleached condition. Polished single yarns are most largely dyed. In 1914 the import of dyed yarns, without finish, amounted to 176,694 pounds (of which 146,751 pounds were Turkey red), and in 1918 to 11,715 pounds (of which 8,000 pounds were Turkey red). The import of single yarns in the bleached condition was small in both years. A fair proportion of the single yarn imported was polished, but very little single yarn was either mercerized or gassed, with the exception of the D. S. or double-spun prepared yarns for lace, which were preferred gassed and which were able to stand this processing because of their extra twisting. It is difficult to gas ordinary single yarns without tendering or otherwise adversely affecting their quality or appearance; it is preferable therefore to gas in the ply.

Two-ply yarns.—Two-ply yarns normally constitute about three-fourths of the cotton yarns imported into the United States. Among the various reasons for this preponderance may be mentioned: (1) Industries such as the lace curtain, the Levers lace, and the silk velvet, which are not equipped with cotton spindles, require mainly ply yarns; (2) 2-ply yarns are more costly than either multiple-ply or single yarns and hence the labor advantage of the English is greater; (3) doubling is a more specialized industry in England and English twisting (doubling) is said to be more even and more carefully regulated to the nature of the goods to be manufactured than is ordinarily the case with yarns obtainable on the American market; (4) the lack of flyer twisters in this country makes it impossible to obtain perfect ply yarns in fine counts, even when such yarns are spun here; and (5) much yarn is imported because of British gassing and this operation is best effected on ply yarn. Even in the domestic trade it is probable that there is more demand for 2-ply yarns than single yarns as users of single yarns are more likely to have their own spinning equipment.

The main counts of 2-ply yarns imported in 1914 were 78/2, 58/2, 120/2, 68/2, 98/2, 60/2, 140/2, and 70/2; in 1918 they were 78/2, 98/2, 58/2, 140/2, 70/2, 120/2, 68/2, and 48/2 in the order named. The greater part of these imports come in the gray. Substantial amounts are gassed, mercerized, or prepared; scarcely any 2-ply is polished before import. The lace and lace curtain industries are the largest consumers of imported 2-ply yarns. Substantial amounts are imported for mercerizing, for the backs of silk velvets, and for voiles, as well as for woven labels, ribbons, knit goods, and other fabrics.

Multiple-ply yarns.—The term "multiple ply" is used to designate ply yarns having more than two ends twisted together. Imports of multiple-ply yarns, excluding cabled yarns, are confined largely to 3-ply and 4-ply. The 3-ply yarns are mostly for finishing into sewing thread and are mainly in the gray but gassed; some are also mercerized. The 4-ply yarns are used in coarse counts for hand knitting or embroidery work and in finer counts for hat bands. They are mainly in the gray though some, such as the 33/4 and 36/4 for embroidery work, are dyed. There is a small import of 5-ply, almost entirely for handkerchief embroidery, of 7-ply and of 8-ply, also for embroidery work, and small sporadic imports of others in small amounts, such as 9-ply for special underwear or 15-ply for special braid.

Cabled yarns.—Cabled yarns are made by twisting two or more doubled yarns together. Yarn imports under this heading are almost entirely harness twine. This is not, as in the case of other yarns, for further manufacture but is for direct use in making the harnesses that form an essential part of the equipment of looms. Harness twine comes in 6, 9, or 12 ply, cabled in the gray.

Sewing threads such as the 6-cord are also cabled; but these enter under a different rate of duty and not as cabled yarns.

IMPORTS OF COTTON YARN ACCORDING TO MANUFACTURE AND COLOR.

Statistics of imports for consumption, following the 1913 tariff wording, record imports of cotton yarn according to two general classes, "not combed, colored, bleached, dyed, or mercerized" and "combed, colored, bleached, dyed, or mercerized." Imports in each class are subdivided according to yarn ranges, but from these published records it is not possible to distinguish carded yarns from combed yarns, or to differentiate the amounts imported in the gray, bleached, or dyed states. Comparisons are occasionally made on the assumption that gray carded yarns take the lower rates and all others the higher rates; this is not quite correct for some gray carded yarn is mercerized and is therefore dutiable at the higher rate. Investigation of invoice data shows that 682,136 pounds in 1914 and 32,518 pounds in 1918 were mercerized gray carded. Carded yarns that have been bleached or dyed are dutiable at the same rates as combed yarns in the gray, bleached, or dyed. For tariff purposes, more detailed information is desirable.

From invoices constituting 91.2 per cent, by weight, of the 1914 imports and 92 per cent of the 1918 imports, it is possible to ascertain the relative proportions of carded and of combed yarns. Subdivided according to gray, bleached, or dyed states, they ranked as follows:

Manufacture and color.	1914		1918	
	Quantity (pounds).	Per cent.	Quantity (pounds).	Per cent.
Carded:				
Gray	2,989,545	47.9	1,775,378	33.9
Bleached	171,709	2.7	31,388	.6
Dyed	566,190	9.1	112,299	2.1
Total carded	3,727,444	59.7	1,919,065	36.6
Combed:				
Gray	2,294,839	36.7	3,177,571	60.8
Bleached	174,953	2.8	98,226	1.9
Dyed	50,191	.8	37,498	.7
Total combed	2,519,983	40.3	3,313,295	63.4
Grand total	6,247,427	100	5,232,360	100

From the above figures it is seen that normally about 60 per cent of the total yarns imported are carded and only 40 per cent combed, but that under the abnormal conditions in 1918, when there was a larger proportion of fine counts, about two-thirds were combed and only one-third carded. The relative percentages of carded and of combed yarns do not, of themselves, however, as in the case of domestic yarns, indicate with any degree of exactness the relative amounts of the coarser and the fine yarns for the reason that there is a large import of fine yarns that are carded only. In the domestic spinning industry, yarns above 60s are rarely spun without combing. Yarns up to 78s that have been spun without combing are imported in large quantities and there is a small import of counts even finer, including some as fine as 140/2, that are carded only.

In regard to color, the table above shows that the demand is chiefly for yarns in the gray or unbleached condition. The proportion of gray yarns ranged from 84.6 per cent in 1914 to 94.7 per cent in 1918. The import of dyed yarns amounted to 9.9 per cent of the total in 1914 and to only 2.8 per cent in 1918. The import of bleached yarns amounted to only 5.5 per cent of the total in 1914 and declined to only 2.5 per cent in 1918.

Tables 12 and 12a amplify the above data by showing in detail the amounts of carded or combed, of gray, bleached, or dyed yarns, imported for each consuming industry in 1914 and 1918. These details are of importance because they indicate the sections of American textile manufacturing which would be most affected by any changes in the differentials assessed on yarns combed or in the bleached or dyed states.

TABLE 12.—*Cotton yarn imported for consumption, 1914 (in pounds).*

Consuming industry.	Carded.				Combed.				Grand total.
	Gray.	Bleached.	Dyed.	Total.	Gray.	Bleached.	Dyed.	Total.	
Curtain	964,488	3,700	1,694	969,882	188,999	......	......	188,999	1,158,881
Levers lace	314,610	25,347	5,681	345,638	678,039	67,731	4,529	750,299	1,095,937
Bobbinet	......	......	......	......	7,410	......	......	7,410	7,410
Voile	......	......	......	......	48,363	......	......	48,363	48,363
Crêpe	2,108	......	3,328	5,436	7,858	......	1,627	9,485	14,921
Towel	......	......	202,879	202,879	......	......	......	......	202,879
Other cotton weaving	318,368	130	20,638	339,136	49,653	......	......	49,653	388,789
Silk	235,091	8,234	20,986	264,311	377,251	7,876	4,241	389,368	653,679
Velvet	138,367	......	32,162	170,529	62,754	......	709	63,463	233,992
Mohair	8,373	......	......	8,373	111,201	......	1,615	112,816	121,189
Wool	15,957	......	10,296	26,253	4,452	......	......	4,452	30,705
Hatband	79,892	1,597	3,517	85,006	77,505	500	17,167	95,172	180,178
Ribbon	8,268	558	1,000	9,826	30,397	2,128	517	33,042	42,868
Woven label	500	7,821	11,601	19,922	......	16,125	1,263	17,388	37,310
Typewriter ribbon	......	......	......	......	6,922	......	......	6,922	6,922
Polished-yarn wares	4,050	44,536	148,069	196,655	5,079	1,966	1,394	8,439	205,094
Other narrow wares	10,318	390	745	11,453	3,672	......	......	3,672	15,125
Hosiery and underwear	585,860	27,225	57,443	670,526	347,722	26,174	6,043	379,939	1,050,465
Electrical	445	......	......	445	11,811	......	......	11,811	12,256
Embroidery	190,380	52,163	46,022	288,565	199,029	50,934	11,081	261,044	549,609
Thread making	86,203	10	129	86,342	49,081	205	......	49,286	135,628
Harness twine	26,267	......	......	26,267	27,646	1,314	......	28,960	55,227
Grand total	2,989,545	171,709	566,190	3,727,444	2,294,844	174,953	50,186	2,519,983	6,247,427

Table 12a.—*Cotton yarn imported for consumption, 1918 (in pounds).*

Consuming industry.	Carded.				Combed.				Grand total.
	Gray.	Bleached.	Dyed.	Total.	Gray.	Bleached.	Dyed.	Total.	
Curtain	1,188,675			1,188,675	236,420			236,420	1,425,095
Levers lace	216,355	13,003		229,358	542,637	44,771		587,408	816,766
Bobbinet	291			291	1,323			1,323	1,614
Voile					278,532			278,532	278,532
Crépe	133			133	1,500			1,500	1,633
Towel			63,950	63,950					63,950
Other cotton weaving	25,412	1,103	2,580	29,095	58,815		4,577	63,392	92,487
Silk	61,568	1,200		62,768	239,330	290	2,259	241,879	301,647
Velvet	97,560			97,560	36,989			36,989	134,549
Mohair	1,178			1,178	59,733			59,733	60,911
Wool		272	4,452	4,724	17,059			17,059	21,783
Hatband	26,844		1,430	28,274	60,191		26,237	86,428	114,702
Ribbon	22,181		250	22,431	15,927	9,139		25,066	47,497
Woven label		5,658	16,573	22,231	480	35,325	573	36,378	58,609
Typewriter ribbon	2,357			2,357	9,236			9,236	11,593
Polished-yarn wares	5,375	5,401	21,564	32,340					32,340
Other narrow wares	2,483			2,483	7,739			7,739	10,222
Hosiery and underwear	75,945	4,751		80,696	191,208	334		191,542	272,238
Knit gloves					635,201			635,201	635,201
Electrical	1,586			1,586	648,033	2,161	107	650,301	651,887
Embroidery	18,248		1,500	19,748	72,492	6,206	2,585	81,283	101,031
Thread making	28,007			28,007	40,331		1,160	41,491	69,498
Harness twine	1,180			1,180	24,395			24,395	25,575
Grand total	1,775,378	31,388	112,299	1,919,065	3,177,571	98,226	37,498	3,313,295	5,232,360

A study of these tables brings out some interesting facts in regard to the nature of yarns imported for the different industries. For instance, the lace-curtain industry buys mainly carded yarns, whereas the lace industry requires mainly combed yarns. Turkey red yarn for towels and polished yarns are practically all carded, whereas the imports of glove and of electrical yarns are practically all combed as are also those for typewriter ribbons, voile, and mohair goods.

In 1914 imports were chiefly gray carded whereas in 1918 they were gray combed. With the exception of polished yarns and those used in the towel and the woven label industries, gray yarns greatly predominated in the imports for each section of the textile industry.

Dyed yarns are usually imported in coarse and medium carded counts. They are mainly of coarse Turkey red yarns for towel stripes and of medium count polished yarns in black, tan, or russet. In normal times there are also fair amounts of hosiery and embroidery yarns, and some imports for weaving silks, velvets, cotton cloths, and hatbands, and for name work on labels, that come in the dyed state.

Of the bleached yarns, the 1914 figures show almost equal amounts carded and combed; in 1918 combed yarns predominated. Imports of bleached yarns are normally of lace yarns, embroidery and knitting yarns, and polished yarns, with some for the ground work of woven labels, and some for silk, and silk-ribbon weaving. In 1918 the reduced imports of bleached yarns were mainly for lace and for woven labels; small amounts were used for other purposes.

The ordinary commission charges for bleaching and for dyeing cotton yarns in the United States in 1914 and in 1918 are reported by dyeing and finishing companies to have been as follows:

Yarn converting.	Commission charges in cents per pound.	
	July, 1914.	July, 1918.
Bleaching cotton yarn:		
In warp	2½	5
In skein	3½	6
Dyeing cotton yarn:		
Sulphur black	6	15
Direct cotton colors	10	14

The loss of weight in bleaching varies, but averages around 5 per cent—that is, a yarn spun exactly 100s in the gray would after bleaching become about 105s, and 120s gray would become 126s bleached. The effect of dyeing is usually to add weight to the goods, making the yarn count coarser; in some instances, however, the reverse happens.

IMPORTS OF COTTON YARN ACCORDING TO FINISH.

Examination of invoices covering 91.2 per cent of the cotton yarn imported in 1914 and 92 per cent of that imported in 1918 indicates that over half of the yarns imported were processed. Only 40 per cent of those imported in 1914 and 42½ per cent of those imported in 1918 were shipped without special finish.

Aside from bleaching, dyeing, and printing, which may be differentiated as converting rather than finishing, there are four special finishing processes to which more or less of the imported yarns are subjected. These are gassing, mercerizing, preparing, and polishing. A yarn may be put through one, two, or three of these special finishing operations to adapt it for special work.

In Tables 13 and 13a imports of cotton yarns for each consuming industry are listed according to the special finish or finishes to which they have been subjected. Summarizing these tables, the following figures illustrate the extent to which each process was used on the imports of 1914 and 1918:

Finish.	Quantity (pounds).	
	1914	1918
Cotton yarn imports:		
Subjected to gassing	2,366,085	1,875,295
Subjected to preparing	1,362,259	1,680,176
Subjected to mercerizing	1,233,244	312,702
Subjected to polishing	218,167	43,015
No finish specified	2,503,938	2,224,410

The above résumé is intended to show the pounds of yarn subjected to each process, irrespective of whether or not any other process was also employed—that is, a yarn that was gassed and prepared and mercerized would have its weight entered under each heading. Because of this duplication the above list can not be totaled as in the case of the more extended Tables 13 and 13a, which show figures for each combination separately.

TABLE 13.—*Finish of cotton yarns imported for consumption, 1914* (*in pounds*).

Consuming industry.	Gassed.	Mercerized.	Mercerized and gassed.	Prepared.	Prepared and gassed.	Prepared, gassed, mercerized.	Polished.	Mercerized, polished.	Not specified.	Total.
Curtain	8,448	3,200	250	461,216	3,500				682,267	1,158,881
Levers lace	135,924	736	3,590	111,010	741,177	5,368			98,132	1,095,937
Bobbinet					7,410					7,410
Voile	45,903								2,460	48,363
Crepe	7,083	2,061							5,777	14,921
Towel									202,879	202,879
Other cotton weaving	111,370	15,801							261,618	388,786
Silk	134,774	108,965	115,382				1,008		293,550	653,679
Velvet	124,858	531		2,897	7,960		1,050		96,696	233,992
Mohair	700								120,489	121,189
Wool	49	256	1,632						28,768	30,705
Hatband	139,873	7,880	5,376						27,049	180,178
Ribbon	36,610	517	3,132						2,609	42,868
Woven label	565	5,213	327	1,425	20,240	56			9,484	37,310
Typewriter ribbon	2,716								4,206	6,922
Polished-yarn wares							201,858	3,236		205,094
Other narrow wares	12,032		1,458						1,635	15,125
Hosiery and underwear	116,180	309,501	410,919						213,865	1,050,465
Electrical	8,058								4,198	12,256
Embroidery	29,068	112,262	18,968				3,421	4,812	381,078	549,609
Thread making	28,880	15,766	76,049						14,933	135,628
Harness twine	200						2,782		52,245	55,227
Total	943,291	582,689	637,083	576,548	780,287	5,424	210,119	8,048	2,503,938	6,247,427

TABLE 13a.—*Finish of cotton yarns imported for consumption, 1918* (*in pounds*).

Consuming industry.	Gassed.	Mercerized.	Mercerized and gassed.	Prepared.	Prepared and gassed.	Prepared, gassed, mercerized.	Prepared, mercerized.	Polished.	Not specified.	Total.
Curtain	4,095			857,250	4,600				559,150	1,425,095
Levers lace	30,034			189,666	566,973	250	1,032		28,811	816,766
Bobbinet				100	1,514					1,614
Voile	273,644								4,888	278,532
Crepe									1,633	1,633
Towel									63,950	63,950
Other cotton weaving	16,298	5,852	1,103						69,234	92,487
Silk	162,970	7,800	119,772					3,660	10,445	304,647
Velvet	98,583	495			9,096				26,375	134,549
Mohair									60,911	60,911
Wool									21,783	21,783
Hatband	113,580		1,122							114,702
Ribbon	43,215		3,473					250	559	47,497
Woven label				1,035	49,692				7,882	58,609
Typewriter ribbon	2,484								9,109	11,593
Polished-yarn wares								32,340		32,340
Other narrow wares	2,846							1,900	5,476	10,222
Knit gloves									635,201	635,201
Hosiery and underwear	102,276	22,788	137,362						9,812	272,238
Electrical		2,161							649,726	651,887
Embroidery	87,237	1,461							12,333	101,031
Thread making	35,045		8,031					950	25,472	69,498
Harness twine								3,915	21,660	25,575
Total	*972,307*	40,557	270,863	1,048,051	631,875	250	1,032	43,015	2,224,410	5,232,360

The gassing process is the most important one to which cotton yarn is subjected before import; in both 1914 and 1918 a little over 37 per cent, by weight, was listed as having been passed through the gas flame. Preparing is the next most important process; about 22 per cent of the yarns imported in 1914 and 32 per cent of those imported in 1918 were first flattened by being passed between the heavy rollers of a yarn-preparing machine. The imports of mercerized yarns constitute a smaller proportion of the total, partly because of the differential duty on such yarns and partly because mercerization is carried on as cheaply in the United States as abroad. In 1914 less than 20 per cent, and in 1918 less than 6 per cent of the totals were mercerized before import. About 3½ per cent of the 1914 imports and less than 1 per cent of the 1918 imports were polished.

Of the four finishing processes it may be noted that mercerizing is the only one specified in the tariff law and yet, curiously enough, it is the one that least needs protection for, as will be shown later, mercerization costs are no higher in this country than abroad.

Gassing.—The four yarn-finishing processes are all developments of the last century. Gassing was probably the first of the processes used, as a textile work published in 1835 referred to the gassing of fine yarns for the lace and hosiery industries. In the last two decades the gassing of yarns has become a very important branch of the British textile-finishing industry; its recent extension has been due largely to the development of mercerization and the discovery that the best luster is obtainable only by gassing as well as mercerizing. In the United States there are as yet comparatively few plants that do gassing, and much cotton yarn is imported primarily for the reason that it is gassed. More than a third of the imports of cotton yarn is normally required in the gassed condition.

The object of gassing or singeing is the removal of the fuzz of loose projecting fibers found on all cotton yarns after ordinary spinning and doubling. The clearing away of this fuzz from the surface of the yarn greatly improves its appearance as the yarn shows up smoother, rounder, and brighter. An incidental but important result is that the yarn, by reason of the removal of the fuzz, weighs less per yard and is therefore raised to a higher count. Incidentally, also, gassing slightly increases the relative strength of the yarn and makes it slightly darker in shade.

In gassing, the yarn is passed one or more times through the blue part of the flame from a Bunsen gas burner, the speed being regulated so that the projecting fibers are singed off without the yarn itself catching fire. Fine yarns are passed through a shorter length of flame and at a higher rate of speed than are coarse yarns. It is, however, not feasible to increase the speed in proportion to the yarn count; that is to say, the speed for 80/2 on the gassing frame would at the most not be more than 50 per cent above that for 20/2 though it is four times as fine. The finer the yarn, therefore, the longer it takes to gas a given weight, and the greater the cost per pound of gassing. The cost of the process also depends on the nature of the yarn, whether soft or hard spun, and on the degree to which the process is carried; voile yarns, for instance, are gassed severely, sometimes gassed twice, with necessary increase in cost. Owing to the time and labor involved, gassing costs more in the United States than in England and there is comparatively little yarn gassed here above 80s.

In some instances yarn is now gassed electrically, a charged plate being substituted for the gas flame as a singeing agent, but this system is still in course of development and has not come into general use.

In England the usual practice in gassing is to wind the yarn from bottle-shaped bobbins on to spools or tubes. For export the gassed yarn is shipped on the tube (which the English call a cheese) or more often is reeled off into skeins.

The Levers lace industry uses mostly gassed yarns and, as it also requires mainly fine counts, it has a double reason for being the main purchaser of gassed yarns from abroad. In 1914 it imported 886,059 pounds and in 1918, 597,257 pounds of gassed yarns. In 1914 lace, as a consumer of imported gassed yarns, was followed by hosiery, broad silks, hatbands, velvet, cotton cloth, and sewings; in 1918 it was followed by broad silks, voile, hosiery, hatbands, velvet, and embroidery.

An analysis of imports of gassed yarns shows that normally about half consists of hard twisted yarns for direct use in making such articles as lace, voile, and labels, and about half of soft twists, of varying degrees, for mercerizing.

The testimony of importers is that on fine counts of 60/2 ply and up, the English usually quote the same for gassed as for plain (ungassed) yarns. To make 100/2-ply plain yarn, it is necessary to spin to at least 100s, whereas to make 100/2 ply gassed it is necessary to spin to only about 94s, as the gassing, by decreasing the weight per unit of length, increases the yarn count to that specified. The larger production on the coarser count, for example on 94s instead of 100s, is considered by the British doubler to offset the cost of gassing. On counts under 60/2, where there is not such a large relative difference between the counts before and after gassing, it is stated by importers that the English make a nominal charge for gassed yarns over ungassed of from one-half to 2 cents a pound, and that these differentials have changed little during the war.

In the United States gassed yarns are usually sold at a price over plain to cover fully the cost of gassing. Finishing companies report the ordinary commission charges for gassing to have been as follows:

Gassing.	Commission charges in cents per pound.	
	July, 1914.	July, 1918.
Counts:		
40/2	4	6
50/2	5	7
60/2	6	8
70/2	7	9
80/2	8	10
100/2	11	13

Gassing is done by comparatively few American firms and those that do rarely have orders for counts above 80s. Not only labor but gas itself is normally cheaper in England than in America; the English labor differential increases with the increase in fineness of counts handled. Imports of gassed yarns are almost entirely 2-ply with the exception of the specialty of 70/1 double-spun yarn which is a hard-twisted yarn that substitutes for 140/2 lace yarn.

The effect of gassing as a factor in the import of cotton yarns is brought out in the course of many letters from importers, for instance:

> With reference to the gray carded and combed yarns, which we have been importing, would state that the great bulk of these yarns are used in the manufacture of tie silks, dress goods, hatbands, ribbons, and other mixed-silk goods, either as warp or filling. Imported yarns are preferred, as these yarns are gassed and the fibers are removed through the gassing process which gives a smoother and more lustrous thread and the trade prefers the imported gassed Egyptian yarn.

> The special advantage of imported yarns for use in silk manufacture lies in the fact that the English yarns are gassed, no charge being made for that operation. The vast majority of domestic yarns are ungassed.

The following is from an important yarn importer, under date of January 14, 1919:

> We wish to state that with the exception of gassing the prices charged in England to-day are practically the same as charged in this country, so much so that we import our yarn used for dyeing in the gray state and have it dyed here. We also have our mercerizing done here as the prices in England are about the same as in this country.

Mercerizing.—Commercial mercerization is a very recent development and one of increasing importance. The history of the mercerization process dates back to 1850 when John Mercer, an English calico printer, patented a process for increasing the strength and solidity of cotton fabrics by subjecting them to strong solutions of caustic alkalies. It was not until 1890, however, when Arthur Lowe patented an arrangement for carrying out the process under tension, thereby obtaining a lustrous finish resembling silk, that the commercial importance of mercerization was recognized. Extensive development of the process has largely occurred since 1900.

Caustic soda is the alkali generally employed in commercial mercerization. The object of mercerization is to obtain a lustrous silk-like finish; incidentally the yarn is increased in strength and in affinity for dyestuffs. The caustic soda appears to be absorbed by the cotton fiber which swells and thereby straightens out from its normal twisted-ribbon form; if the tendency to contract in length is prevented the fiber assumes an appearance more cylindrical and hairlike, and the smoother and more cylindrical shape makes it a better light reflector and therefore more lustrous.

The mercerizing action of caustic soda is very rapid, in fact 10 minutes is usually amply sufficient for the process; the alkali must then be rinsed out to prevent tendering. The production of a high degree of luster depends to a considerable extent on the fineness and length of the fiber. Sea-island and Egyptian cottons mercerize best; other long-staple cottons, including American Peelers, are the next best. The shorter-stapled cottons, such as American uplands, were formerly considered unfit for mercerization, but the process is being perfected to an extent where they also can be used, though the luster obtainable is not so pronounced as in the case of longer cottons. The best luster is obtained by the twofold twisting of long-staple cotton yarns, in which the outer fibers lie as nearly as possible parallel to the axis, and by the removal of all projecting fibers by careful singeing (gassing).

Cotton yarn is mercerized either in the skein or in the warp; the former process is the older and is still customary abroad, whereas the latter has become the customary process in this country, as it is cheaper and uniform results are more easily obtained. In skein mercerization the hanks of yarn are stretched around revolving rollers and successively subjected to the action of caustic soda, a washing with warm water, and, finally, a washing with cold water. When yarn is mercerized in the warp it is passed continuously through a series of vats in which it is boiled out, treated with caustic soda, washed, treated with dilute acid, and finally finished with soap. The necessary tension is obtained by a series of squeeze rolls.

Gassed mercerized yarns are more lustrous than plain mercerized. Imported mercerized yarns have as a rule been gassed also. The gassing process can either precede or follow the mercerization. Most of the imported yarns have been gassed after mercerization. These yarns are chiefly mule-spun Egyptian, the Egyptian cotton taking mercerization exceptionally well. Mercerization usually takes place in the gray, and any bleaching or dyeing is subsequent thereto. Some of the unmercerized yarn imported is imported *particularly because it* is of Egyptian cotton, mule-spun with soft twist, and for the purpose of being mercerized in this country before it is used for knitting or weaving. Some of it is imported on warp rollers ready for mercerizing, such yarn being usually invoiced as "378 ends 6,000 yards on wooden rollers." The specification "378 ends" is explained by the fact that most quillers, machines used to wind the yarn onto bobbins after mercerizing (or other processing) in the warp, are equipped to handle that number of ends. The wooden rollers, about 18 inches in length, are dutiable at 15 per cent as manufactures of wood, in addition to the net weight duty on the yarn; after use these wooden rollers are returned to the English mill.

Before the war some yarn, such as 78/2, was bought in England and shipped to Crefeld to be dyed and mercerized before export to America; the reason stated is that the Germans mercerized more slowly and carefully than the English and that there was less liability of streaky effects in hosiery or other goods made of the yarns treated in Crefeld.

The knitting industry is normally the main industry requiring mercerized yarns from abroad; of 1,362,259 pounds of mercerized yarns imported in 1914, no less than 720,420 pounds were stated to have been for knitting. Of 312,702 pounds of mercerized yarns imported in 1918 the knitting industry bought 160,150 pounds. It may be stated, incidentally, that in the knitting industry artificial silk has displaced large amounts of mercerized cotton yarn and that in some years of low prices silk also is a factor to be reckoned with. In 1914 broad silks, embroidery, and sewings (yarn for making sewing thread) were the main goods, after hosiery, into which imported mercerized cotton yarns entered. In 1918 broad silks were the only other goods requiring any substantial amounts of foreign mercerized yarns. The broad silks into which mercerized yarns enter are largely cheap goods for neckties and other purposes; for these the all-silk effect can only be attained by mercerizing cotton yarns to give a luster that will compare favorably with the silk with which they are interwoven; certain manufacturers prefer foreign to domestic mercerization for this purpose.

Reports from American finishing companies show that the ordinary commission charges (these include a profit of course) for mercerizing cotton yarns of 80s and under, have been as follows:

Mercerizing in United States.	Charges in cents per pound.	
	July, 1914.	July, 1918.
Warp mercerization	5–6	8–10
Skein mercerization	8	12

Few companies reported any orders for mercerizing counts above 80s but it was stated that for mercerizing counts finer than 80s the commission price was generally increased 1 cent a pound for every 10 numbers, making 100/2 cost 2 cents a pound more than the prices above quoted.

Importers stated that British quotations on mercerized yarns under 80s showed the following differentials above unmercerized yarns:

Mercerizing in United Kingdom.	Charges in cents per pound.	
	July, 1914.	July, 1918.
Warp mercerization	7	10
Skein mercerization	8	12

The charges for mercerization vary somewhat from plant to plant, as well as from year to year, but the consensus of opinion is well summed up by one of the most important domestic mercerizers of cotton yarns who writes:

> I believe that the English have always got as much as we do here or even a little more for the mercerizing process, and think that it would be a fair comparison to estimate that their charges in 1914 were about the same as ours, and their charges today as great or even greater.

Preparing.—In flax spinning mills preparing is a term used to cover the processes of getting the material ready to be spun into yarn; occasionally it is also used in the same general sense in connection with cotton spinning. For users of lace yarns, however, "preparing" has a distinct and totally different meaning. In the lace industry it denotes the process whereby yarn is flattened and rendered more flexible by being passed through the calendering rolls of a special yarn-preparing machine. The primary object of this process is to fit the yarn for use in being wound circumferentially on thin brass bobbins, such as are used on lace, lace curtain, and bobbinet machines, so that as many yards as possible may be so wound and thus avoid too frequent stoppages for yarn renewal. Though primarily intended for this purpose, that is for use as bobbin yarn, some prepared yarn is also used for other purposes, particularly for the ground work of woven labels. In the latter case the flattened cotton yarn gives the labels a linen-like appearance.

No prepared yarn is made in this country and tentative efforts to make it have not resulted to the satisfaction of the users. Some data have been given as to this matter under the heading of "lace-curtain yarns" and "lace yarns," in the preceding chapter; these may be supplemented by a later letter from one of the largest users:

> The domestic curtain manufacturer has been more than willing for the past 15 years to secure these brass-bobbin yarns in this country, and thus be spared the trouble of clearing the goods and dealing with a spinner abroad, but up to this time (February, 1919), in so far as I know, has never been able to make satisfactory arrangements to obtain them locally.
>
> Some years ago I personally worked hand in hand with a large spinning mill in New England, with the idea that the proper production of these yarns here would be to our mutual advantage. I gave to the spinner the benefit of all the experience which we had learned in the industry, and in return I was accorded full detail as to the cost of production through each process. The final result showed a yarn of doubtful equality to the English product, and a cost, in spite of a high duty, prohibitive to the spinner. * * * In closing I would say that up to this time the domestic spinner does not know the whole secret of the proper manufacture of this highly specialized product, at least on the evidence of anything he has yet shown. As to his future ability to make brass bobbin yarns, there is no doubt but what a few high-grade mills could do so, but only after working out and correcting for themselves the defects which they have asked us in the past to find for them. Having achieved equal quality, the price would offer no inducement, even at 22½ per cent duty for 78/2 as now.
>
> As it stands to-day, these vitally essential bobbin yarns are only obtainable in England, and the duty on them does not protect the domestic spinner, who is not engaged in their manufacture, but only lays a heavy tax on the curtain manufacturer on a commodity he can not secure here.

Curtain manufacturers are unanimous in declaring that they have not been able to obtain satisfactory prepared yarns in the American market and that the lace curtain and the Levers lace industry are unable to operate without British yarn.

Importers state that in general the British charge about a halfpenny, or 1 cent, a pound more for prepared yarn than for unprepared.

Polishing.—Polishing or glazing, as it is also called, is the least important of the finishing processes to which imported yarns are subjected. In 1914 only 218,157 pounds were imported polished, and in 1918 only 43,015 pounds.

The previous chapter gives a description of the imports distinctively known as polished yarns, by which is meant high-polished yarns made by a process not economically possible here. These yarns come highly polished in the single for manufacture into shoe laces, braids, and luster linings. In addition a small amount of the yarn imports for some other industries are, for special reasons, required polished. These include harness twine for making "French" harnesses and yarn for special silk weaving and for special embroidery work.

NATURE OF THE YARNS SUPPLIED BY EACH COUNTRY.

Table 14 serves to show the consuming industries catered to by each of the four main yarn suppliers—United Kingdom, Germany, Switzerland, and France—in 1914. Comparable figures are available for 1918, but these imports were almost entirely from the United Kingdom and came in under abnormal conditions.

TABLE 14.—*Source of cotton yarn imported for consumption (in pounds).*

Consuming industry.	1914					1918 (total).[1]
	United Kingdom.	Germany.	Switzerland.	France.	Total.	
Curtain	1,155,488	3,393			1,158,881	1,425,095
Levers lace	1,095,937				1,095,937	816,766
Bobbinet	7,410				7,410	1,614
Voile	48,363				48,363	278,532
Crêpe	1,279		2,061	11,581	14,921	1,633
Towel	1,707	201,172			202,879	63,950
Other cotton weaving	369,416	19,373			388,789	92,487
Silk	448,470	69,435	123,020	12,754	653,679	304,647
Velvet	201,030	25,349		7,613	233,992	134,549
Mohair	121,189				121,189	60,911
Wool	30,705				30,705	21,783
Hatband	154,876	25,302			180,178	114,702
Ribbon	42,351	517			42,868	47,497
Woven label	29,091	8,219			37,310	58,609
Typewriter ribbon	6,922				6,922	11,593
Polished-yarn wares	37,745	167,349			205,094	32,340
Other narrow wares	13,990	1,135			15,125	10,222
Knit gloves						635,201
Hosiery and underwear	849,602	200,607	256		1,050,465	272,238
Electrical	12,256				12,256	651,887
Embroidery	166,722	76,894	305,879	114	549,609	101,031
Thread making	135,509	119			135,628	69,498
Harness twine	52,919		1,236	1,072	55,227	25,575
Grand total	4,982,977	798,864	432,452	33,134	6,247,427	5,232,360

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[1] The imports in 1918 are not shown separately by countries because they relate entirely to English invoices with the sole exception of 1,000 pounds of embroidery yarn from Switzerland.

In 1914 Germany was the main source of imports of Turkey red yarns for towels and of polished yarns for making shoe laces and other articles; Switzerland predominated in the embroidery yarn trade; and France led only in the negligible trade in crêpe yarns. All of the other consuming industries noted depended most largely, in some instances entirely, on the United Kingdom for such yarns as were required from abroad.

Table 15 shows the 1914 imports from each country divided into carded and combed yarns, and these subdivided according to color.

TABLE 15.—*Source of imports, 1914 (in pounds).*

	United Kingdom.	Germany.	Switzerland.	France.	Total.
Carded:					
Gray	2,760,004	144,254	84,885	402	2,989,545
Bleached	50,118	70,027	51,455	109	171,709
Dyed	85,860	458,174	11,337	10,819	566,190
Total	2,895,982	672,455	147,677	11,330	3,727,444
Combed:					
Gray	1,945,933	85,980	242,849	20,077	2,294,839
Bleached	126,591	13,715	34,647		174,953
Dyed	14,471	26,714	7,279	1,727	50,191
Total	2,086,995	126,409	284,775	21,804	2,519,983
Grand total	4,982,977	798,864	432,452	33,134	6,247,427

In the normal year 1914 the United Kingdom supplied more carded than combed yarn and most of the German yarns were carded only, whereas the larger part of the smaller shipments from Switzerland and France were combed. Over half of the German shipments were dyed, in fact Germany supplied the larger part of the total imports of dyed yarns. The United Kingdom leads in the shipment of bleached yarns but in the case of both Germany and France bleached yarns form a relatively larger proportion of their trade.

IMPORTS OF COTTON YARN FROM THE UNITED KINGDOM.

The United Kingdom has always been the main source of the cotton yarns imported into the United States. Imports from that country form such a large percentage of the total that a description of one would almost suffice for the other even in normal times; in 1918 there were practically no imports from any other country. Two outstanding features of this trade, however, are England's control of the supply of lace yarns and the large shipments from that country of softer spun yarns intended for interweaving or interknitting with silk. These are used in mixed-silk goods such as hosiery, hatbands, ribbons, tie silks, cotton-back satins, and velvets. The United Kindgom participates in supplying the needs of every yarn importing industry, but in normal times has a comparatively small share in American purchases of polished yarns, of Turkey-red yarns for the towel industry, and of embroidery yarns.

Manchester and Nottingham are always the leading centers of origin and are followed by others such as Bradford, Bolton, Macclesfield, Oldham, Mansfield, Glasgow, and Stockport, in varying order of importance.

The United Kingdom leads in number of spindles but spins relatively finer counts so that less cotton is consumed in the United Kingdom than in the United States. Japan, and sometimes India, export more pounds of cotton yarn than does the United Kingdom but in value the English exports far exceed those of any other nation and they are more widely distributed, in fact the United Kingdom is the universal yarn provider. The United Kingdom uses mainly mule spinning and is the largest consumer of Egyptian cotton, the one long-stapled cotton that is produced in bulk. The British have a monopoly of the international trade in the extreme fine counts.

The war caused many changes in the English export trade in cotton yarns. The loss of their best market-central Europe, the curtailed purchasing power of India and some other important sections, and Governmental regulations, were factors in diverting trade from its *regular channels*. A control board was established for the cotton industry by the British Government in June, 1917, with powers for regulating the purchase of raw cotton and the running of machinery. The output was greatly curtailed and Governmental requirements were put before all others. The export of cotton yarn in 1918 was less than two-thirds of that of 1913 so far as regards quantity; prices however, attained a new record. The makers of fine counts tried to offset the loss of some of their markets elsewhere by increasing their sales to the United States; they had some success and in 1917 sold the United States more than ever before; since then their prices have been relatively so high that American purchases have greatly decreased. In normal times raw cotton rules at very near the same price in England and in the United States so that it can hardly be considered as a factor on either side, but owing to the scarcity of shipping and its dangers, stocks of cotton in England decreased greatly during the war and as a result the price of cotton in England went up all out of proportion to the prices ruling in the United States. By January, 1918, the course of prices in the two countries had diverged to such an extent that cotton costing 33 cents a pound in New York was selling at 47 cents a pound in Liverpool. The result was to reduce the British export trade to America during the calendar year 1918 to yarns that could not be obtained in the domestic market but that were essential for carrying on some business, that is, mainly the fine lace yarns and "prepared" yarns for lace and lace curtains. This situation has effected a closer union between American spinners and users of certain kinds of yarn and the American spinners will probably continue to hold much of the trade thus gained. The fact that domestic spinners have learned to cater to certain special requirements which had theretofore not interested them will also aid in the retention of foreign trade.

In England, where the cotton industry is highly specialized, it is divided among spinners, doublers, and manufacturers, the last named being a term for those who weave or otherwise manufacture from the yarn. The spinner produces the single yarn, and the doubler attends to the twisting of two or more ends together as well as to gassing, mercerizing, preparing, and polishing, and puts up the finished product in skeins, cones, tubes, or beams as desired. As most of our imports are ply yarns, it is the British doubler who is the main factor in this trade. The doubling of yarns as a separate industry in England started in the early part of the nineteenth century, when the development of the lace, velvet, and hosiery industries, together with the sewing thread industy, began to cause a large demand for ply yarns. To the doubler the single yarn is raw material; it is practically all bought in cop form—that is, mule spun. For most purposes the doublers use doubling weft, this being the term for yarn that is spun harder than weft (filling) and softer than twist (warp).

It is a matter of common knowledge and therefore no divulgence of confidential information to state that the Fine Cotton Spinners' & Doublers' Association, which has its headquarters at Manchester, is the one big factor in the cotton-yarn trade between England and the United States. This organization largely controls the fine-spinning trade of the world. It was formed in May, 1898, by the amalgamation into one concern of 31 firms engaged in spinning long stapled cottons or in doubling yarns made from this or other staples of cotton. Its prospectus stated:

> The extreme difficulty of inducing consumers of fine yarns to accept the risk of using new or unknown marks in the manufacture of the expensive fabrics in the manufacture of which this class of yarns so largely enters, renders an established connection indispensable. This facts adds to the value of those long existent concerns which have won a reputation and gained the confidence of buyers, and at the same time places an obstacle in the way of new competitors.

As usual, there were also set forth the advantages of eliminating unnecessary competition, of the centralization of buying and selling, of permitting more specialization by the individual mills, and of making available to all the combined practical experience of the best experts.

Contrary to the experience of some other British textile combinations the Fine Spinners have been very successful. They have taken over at least a dozen additional companies and control over 3,000,000 spindles in England besides the most important fine-yarn spinning companies in France. Starting with a capital stock issue of £4,000,000 the authorized capital is now over £7,000,000, and there is a large reserve fund. The dividends on ordinary shares have been 8 per cent in 1899 and again in 1900, 9 per cent in 1901, 8 per cent in 1902, 1903, and 1904, 4 per cent in 1905, 6 per cent in 1906, 10 per cent in 1907, 12 per cent in 1908, 8 per cent in each of the years 1909 to 1916 (in 1913 a bonus of 20 per cent in preferred ordinary shares in addition), 10 per cent in 1917, and 10 per cent in 1918. In 1919 they paid 12 per cent and in addition divided up certain capital reserves equal to another 20 per cent. This makes a total of 217 per cent paid in dividends to holders of ordinary shares in the 21 years since the formation of the company. Such have been the results of the practical monopoly by the association of the manufacture of fine counts for the home and foreign markets.

It seems that each mill owned by the F. C. S. A. enjoys a certain amount of freedom in the manufacture and in the quoting of yarns, for instance, identical yarns may be bringing 5 per cent more as spun by one mill than by another, because of better material, better manufacture, or better reputation, but payments are handled by the central office.

This huge combination has rendered it most difficult for American spinners of fine yarns to compete. The Fine Spinners make a wide range, and sell to the whole world, whereas the American market is comparatively restricted. The development of fine spinning in the United States has been largely confined to the few mills producing fine yarns for their own requirements; there are no domestic yarns finer than 100s, in fact very few counts above 80s, quoted on the American market.

IMPORTS OF COTTON YARN FROM GERMANY.

From 1899 to 1915, inclusive, there were substantial imports of cotton yarn from Germany; in six of these years the trade exceeded a million pounds. Though ranking far behind the United Kingdom Germany was our second largest source of supply.

Prior to the war Germany not only ranked third in the total consumption of cotton, but also held the same rank in the consumption of American, Indian, and Egyptian cottons. The German spinning mills were mainly on coarse and medium counts; comparatively few mills spun above 50s, although at least one mill spun as high as 200s for its own use.

Germany normally imported two or three times as much cotton yarn as she exported. The main feature in the import trade was the purchase of large amounts of fine yarns from England for use in making sueded gloves and other special knit goods, embroidery, braid, and lace. The export trade was mainly confined to European countries, particularly Holland, England, Austria, Russia, Roumania, and Denmark. Her overseas trade was much less important, though purchasers for certain yarns were found in the United States, Brazil, and Argentina.

As the Germans could not compete on the American market with domestic coarse yarns nor with fine or special yarns from England, their sales were mainly due to fast dyeing, to a high-polish finish, or to careful mercerizing. According to the testimony of importers in a position to know, most of the fine yarns from Germany as well of a portion of the medium counts, such as those used for hatbands, were spun in England and only finished in Germany. The German "Veredelungsverkehr" or "improvement trade," by means of which yarns were given temporary free admission for the purpose of dyeing, mercerizing, or otherwise advancing in value before re-export, was before the war a factor of increasing importance in the export trade in cotton yarn.

In 1914 about half of the American purchases of German yarns were in the single. Almost half was 2-ply; there was a small amount of 4-ply, but practically none of other multiple ply. About 84 per cent was carded and only 16 per cent combed. About 60 per cent was in the dyed state, about 29 per cent in the gray, and about 11 per cent bleached. Approximately a fifth was polished and a fifth mercerized; very little was gassed or prepared.

Imports into the United States of cotton yarns from Germany in 1914 were divided according to manufacture, color, and finish as follows:

Cotton yarns from Germany, 1914 (in pounds).

	Polished.	Mercerized.	Mercerized and gassed.	Gassed.	Prepared.	No finish specified.	Total.	
							Quantity.	Per cent.
Carded:								
Gray	4,050	68,233	2,224	105	1,699	67,943	144,254	18.06
Bleached	41,851	5,939	2,491	....	....	19,746	70,027	8.77
Dyed	110,687	54,637	16,843	200	4,109	271,698	458,174	57.35
Total carded	156,588	128,809	21,558	305	5,808	359,387	672,455	84.18
Combed:								
Gray	....	2,388	2,524	224	....	80,844	85,980	10.76
Bleached	....	375	203	....	....	13,137	13,715	1.72
Dyed	825	5,451	1,200	7,538	....	11,700	26,714	3.34
Total combed	825	8,214	3,927	7,762	....	105,681	126,409	15.82
Grand total	157,413	137,023	25,485	8,067	5,808	465,068	798,864	100.00

From the table, it is obvious that American purchases were mainly of yarns dyed, polished, or mercerized.

German yarn shipments to this country originated mainly in the Rhine Provinces, particularly at Barmen, Crefeld, and Elberfeld, with some at Suchteln and Viersen. There were smaller shipments from Saxon centers such as Plauen, Chemnitz, Glauchau, and Zittau; and from Alsatian centers such as Gebweiler and Colmar; occasional shipments were made from other points such as Dietfurt and Berlin. It may be noted that German shipments included small amounts of yarn that originated across their borders at points such as Schweizerthal and Wetzikon in Switzerland and Alost in Belgium, in addition to the much larger amounts that were spun in England and finished in Germany. Barmen is the center of the German manufacture of ribbons, braids (particularly the fancy braid called "Barmen lace"), and "eisengarn" or high-polished glazed yarn; Crefeld is noted for its velvets and ribbons; Elberfeld is an important printing and dyeing center and carries on dye making on a large scale; Chemnitz is the leading Continental center for knit goods; and Plauen is the source of most of the German machine embroidery, including particularly the special embroidery known as "etched lace" or "Plauen lace." The nature of the manufacturing industries using yarn has, at each export point, apparently been a controlling factor in yarn shipments to the extent that each one shipped mainly cotton yarns of the character used in its local manufactures.

The main counts imported from Germany in 1914, those weighing as much as 10,000 pounds each, and the goods for which they were used are shown in the following tabular statement:

Cotton yarns from Germany, 1914 (in pounds).

Yarn count.	Towels.	Knit goods.	Polished yarn wares.	Embroidery.	Mixed silks.	Velvets.	Hatbands.	Cotton cloths.	Woven labels.	Other.	Total.
120/2	....	41,586	....	88	24,240	....	1,539	6,029	90	....	73,572
6/1	67,455	....	....	2,520	....	....	....	....	....	....	69,975
30/1	....	11,500	45,128	....	50	....	....	....	....	....	56,678
60/2	....	1,274	3,948	16,223	1,777	20,692	850	100	4,889	....	49,753
36/1	....	....	35,533	....	3,763	....	....	....	....	....	39,296
39/1	....	....	21,839	....	15,293	550	....	....	....	....	37,682
20/2	35,850	....	....	652	....	....	....	....	....	....	36,502
98/2	....	30,842	....	88	....	....	....	3,936	....	1,263	36,129
12/1	30,419	....	....	....	....	....	....	....	....	....	30,419
40/1	....	5,500	24,307	....	99	....	....	....	....	....	29,906
38/1	....	8,000	16,152	....	243	....	....	....	....	....	24,395
14/1	19,942	....	....	....	....	....	....	....	....	....	19,942
59/2	....	7,166	....	12,117	....	....	....	....	....	....	19,283
16/1	1,200	....	600	....	17,104	....	....	....	....	340	19,244
30/2	....	1,452	....	12,226	....	....	2,540	....	....	....	16,218
14/2	14,942	....	....	....	....	....	....	....	....	....	14,942
10/1	14,873	....	....	....	....	....	....	....	....	....	14,873
39/2	....	....	....	13,387	....	....	....	....	....	....	13,387
28/1	....	12,500	200	....	267	....	....	....	....	....	12,967
100/2	....	6,122	....	132	186	....	18	5,618	....	....	12,076
26/1	....	10,800	....	....	....	....	....	....	....	10	10,810
8/1	10,553	....	....	....	....	....	....	....	....	....	10,553
Others	5,938	63,865	19,642	19,461	6,413	4,107	20,355	3,690	3,240	3,551	150,262
Total.	201,172	200,607	167,349	76,894	69,435	25,349	25,302	19,373	8,219	5,164	798,864

It so happened that the main count imported from Germany in 1914 was a fine count, but most of the German yarns in that year, as in preceding years, were of coarse and medium counts.

The imports of cotton yarns from Germany in 1914 may be analyzed according to use as follows:

Towel yarns.—The main count was 6/1; this was followed by 20/2, 12/1, 14/1, 14/2, 10/1, and 8/1, and small amounts of 12/2, 8/2, and 16/1. All of these were Turkey-red carded yarns and apparently all were made of American cotton. They were imported because of their color, a Turkey red satisfactory to towel makers being unobtainable in this country. This matter has already been discussed in Chapter III.

Knitting yarns.—Imported German knitting yarns covered a wide range, from as low as 1¼/2 ply up to as fine as 150/2 ply. The only counts of which imports amounted to as much as 10,000 pounds, however, were 120/2, 98/2, 28/1, 30/1, and 26/1. Of 200,607 pounds of knitting yarns imported 122,624 pounds were 2-ply, 57,730 pounds were single yarns, and 20,253 pounds were 4-ply. About two-thirds of the total were mercerized. The main count imported was 120/2; all of this was mercerized and over three-fourths of it was dyed black.

Almost all of the 98/2, the second main count, was mercerized but only about a third of it was dyed; the remainder was chiefly unbleached. Both the 120/2 and 98/2 were made of Egyptian cotton, Abassi being specified on a good part of it; the greater part of it was carded only and a minor portion was combed. The 28/1, 30/1, and 26/1 were all gray carded Egyptian. The 4-ply yarns included in the total are different from the others as they are not for machine work but are put up for hand knitting, usually in packets of 200 grams each packed 20 to a bundle and these baled. These "white knitting cottons" ranged from 4/4 up to 30/4 but the largest import of any one count was only 1,329 pounds of the 12/4.

Polished yarns.—The main counts were 30/1, 36/1, 40/1, 39/1, and 38/1. These yarns, known as eisengarn (iron yarn) in Germany, were imported because of a limited demand for high-polished glazed single yarns which are not produced in this country, although there are ample domestic supplies of the ordinary glazed 2-ply yarns.

Embroidery yarns.—The main counts were 60/2, 39/2, 30/2, and 59/2. Of a total of 76,894 pounds, 36,237 pounds were put up on schiffli bobbins and 12,280 pounds on schiffli tubes; the remainder was mostly in skeins, with a small amount on cones. Most of it was carded only; about a third was listed as combed. Egyptian cotton was used in the main and was usually denoted by the Continental term as "Maco." Of the total, 42,027 pounds were in the gray, 14,003 pounds bleached, and 20,864 pounds dyed. Of this last, 16,814 pounds were Turkey red.

Yarns for silk mixtures.—The main counts were 16/1 and 39/1, both of which were gray combed. The former was mainly for weaving cotton-back satins and tie silks, while the latter was mainly for weaving cotton-and-silk umbrella cloths. Of the total, 45,830 pounds were in the gray, 2,983 pounds were bleached, and 20,622 pounds were dyed, mainly black.

Velvet yarns.—The bulk consisted of 60/2 fast black combed Egyptian, there being only minor imports of a few other counts.

Hatband yarns.—Relatively small amounts of hatband yarns came from Germany. That they were imported at all was due mainly to the fact that some domestic manufacturers consider the Elberfeld blue-black a superior shade and faster color than that made in England or the United States. The larger amounts were of 40/2, 35/2, 30/2, and 25/2.

Other uses.—Yarns for cotton cloth were mainly fine dyed yarns such as 120/2, 100/2, and 98/2, and the total was small. Yarns for woven labels were also imported because of the dyeing; these were mainly black, but included some Turkey red and blue; they were used for name work and the main counts were 60/2 and 50/2. There was also a small amount of other counts, including an import of 150 pounds of 30s in 15-ply for special braid work.

IMPORTS OF COTTON YARN FROM SWITZERLAND.

In the period 1901 to 1915, inclusive, Switzerland ranked third as a source of foreign cotton yarns, though this trade never amounted to as much as a half million pounds in any year. On October 19, 1915, the Swiss Federal Council officially prohibited the export of cotton yarns, and practically none was shipped after that date.

Of 432,452 pounds of cotton yarns imported from Switzerland in 1914, 305,879 pounds were embroidery yarns and 123,020 were yarns for making mixed-silk goods, leaving only 3,553 for other uses. Of the total imports, 284,687 pounds were 2-ply and 123,122 pounds were singles; the largest item in the small remainder was 13,360 pounds of 5-ply for handkerchief embroidery.

The main yarns from Switzerland in 1914 were 16/1, 58/2, and 60/2, imports of these counts being 106,387 pounds, 83,657 pounds, and 60,864 pounds, respectively. There were smaller imports of 46/2, 40/2, 38/2, 36/2, and 30/2; no other count reached as much as 10,000 pounds. The coarsest count was 4/4-ply embroidery, and the highest count 180/9-ply harness twine. Imports of the two extremes were trifling and the Swiss yarns were mainly between 16s and 60s. Switzerland spins a certain amount of very fine counts and also imports fine yarns from England. It is stated by importers that a part of the small export of fine yarns from Switzerland to the United States is spun in England but bleached or put up on schiffli bobbins or tubes in Switzerland. The dead white bleach that the Swiss obtain is unexcelled for embroidery.

The main point of origin of imports is St. Gall, the great embroidery center; small shipments come from other points such as Baar, Ziegelbrucke, and Rorschach.

Switzerland is the leader in embroidery manufacture; when the embroidery industry began to develop in the United States, it was therefore natural that manufacturers should seek to obtain from Switzerland yarns with which to make machine embroidery that would compete successfully with imports of Swiss embroidered articles. The fact that imports of yarn from Switzerland began to increase strongly in 1900 therefore tends to confirm the statement that embroidery manufacture in this country began its expansion in that year. The sudden jump in imports of Swiss yarns in 1910 is undoubtedly due largely to the temporary free admission of embroidery machines by the act of 1909. These embroidery yarns were chiefly for work on the schiffli or shuttle embroidery machine; a small amount was for use on hand embroidery machines. Of 305,879 pounds of embroidery yarns imported in 1914, 160,850 pounds were put up in schiffli tubes, 124,276 pounds in schiffli bobbins, 18,320 pounds in skeins, and 2,433 pounds in cones. The schiffli tube yarn is the *embroidery yarn* proper, the yarn that shows on the face of the fabric, while the schiffli bobbin yarn is used at the back, where it serves to bind the tube yarn in place. The main counts of schiffli tube yarn imported were 58/2, 46/2, 40/2, 38/2, and 36/2, whereas the schiffli bobbin yarn was mainly 58/2 and 60/2, with some 78/2 and a small amount of other counts. Imports of schiffli yarns were for the most part in the gray. The skein yarn was mainly for use on hand embroidery machines and was usually between 50s and 100s n 3, 4, or 5 ply; most of this yarn was either bleached or dyed. A ew leading embroidery manufacturers import direct, but the trade in this line is largely handled by yarn agents.

Of 123,122 pounds of Swiss yarn imported for weaving mixed-silk goods, 106,387 pounds consisted of 16/1; the remainder was made up of 19/1, 20/1, 24/1, and 30/1. These yarns were mainly gray combed; a small portion was carded and a small amount bleached. These yarns were shipped direct from the Swiss spinners to the American silk mills.

IMPORTS OF COTTON YARN FROM FRANCE.

Imports of cotton yarn from France are normally very small, the record being 265,978 pounds imported in 1910, but France ranks as a source of supply after the United Kingdom, Germany, and Switzerland. The French officially prohibited exports of cotton yarn after August, 20, 1915, so there were practically none permitted to be exported after that date.

Of 33,134 pounds of cotton yarn imported from France in 1914, so far as shown by available invoices, 12,754 pounds were for use in the silk trade, 11,581 pounds were crêpe yarns, 7,613 pounds were for velvets, 1,072 pounds for harness twine, and 114 pounds for embroidery. Of the total, 26,258 pounds were in the single, 5,804 pounds were 2-ply, 356 pounds were 6-ply, and 716 pounds 9-ply, the last two plies being harness twine. The coarsest yarn was 8/1 crêpe and the finest was 160/9 harness twine; most of the imports were between 20s and 38s. Of the total, 11,330 pounds were carded, mainly dyed, and 21,804 pounds were combed, chiefly gray yarns.

The yarns imported in greatest quantity from France in 1914 were 7,462 pounds of 20/1, and 5,169 pounds of 30/2; these counts were followed by 48/1, 30/1, 24/1, 36/1, and 38/1.

Most of the yarns for use in the silk trade were single counts between 20s and 60s, combed and dyed black. The crêpe yarns were mainly 30/2, 48/1, and 48/2, usually combed and part gassed. The small import of harness twine consisted of 40/6, 130/9, 140/9, and 160/9.

French invoices often give both French and English counts, such as "2/40/48 crêpe coton 2 tors gauche teinte," which shows that the *yarn was 40/2 French*, the equivalent of 48/2 English, counts.

Owing to the fact that the French use two systems of yarn numbering, the French and the English, they are accustomed, in their domestic, as well as their foreign trade to use both nomenclatures to avoid any uncertainty as to the yarn size intended.

The small yarn shipments from France originated at Lyon, Bellegarde-Valserine, and Lille.

EXPORTING AND IMPORTING CENTERS.

Tables 16 and 16a show the places of origin of cotton yarn imports and correlate these to the customs districts where the yarn was entered.

TABLE 16.—*Cotton yarn imported for consumption, 1914 (in pounds).*

Export centers.	Imported via—						Total.
	New York.	Philadelphia.	Chicago.	Providence.	Connecticut.	Boston.	
Manchester, England	2,162,389	796,688	64,662		65,400	32,526	3,121,665
Nottingham, England	455,309	85,621	33,350	12,500	27,850	84,401	699,031
Bradford, England	265,885	42,013		118,689	66,141	22,447	515,175
Barmen, Germany	387,573					4,721	392,294
St. Gall, Switzerland	268,302		386				268,688
Crefeld, Germany	248,189	2,603			212		251,004
Bolton, England	135,144	12,586			10,000	4,049	161,779
Macclesfield, England	71,079	5,000				4,402	80,481
Liverpool, England	71,467						71,467
Mansfield, England	16,451			7,300		44,425	68,176
Oldham, England	14,131	43,306				8,283	65,720
Baar, Switzerland	65,561						65,561
Ziegelbrucke, Switzerland	52,865						52,865
Stockport, England	7,553				41,372	1,511	50,436
Glasgow, Scotland	5,532					23,010	28,542
Rorschach, Switzerland	28,317						28,317
Neuzingen, Germany	26,724						26,724
Elberfeld, Germany	25,423						25,423
Middleton, England	24,236						24,236
Plauen, Germany	21,091						21,091
Suchteln, Germany	20,375						20,375
Lyon, France	19,217						19,217
Schweizerthal, Germany	5,841	760	8,684				15,285
St. Tugbert, Germany	15,069						15,069
Huddersfield, England			14,900				14,900
Gebweiler, Germany	14,755						14,755
Settle, England	11,141	1,768					12,909
Bellegarde-Valserine, France	12,746						12,746
Bollington, England	12,639						12,639
Rochdale, England		10,030					10,030
Dewsbury, England	10,000						10,000
Paisley, Scotland	7,152						7,152
Colmar, Germany	6,762						6,762
Dietfurt, Germany	6,347						6,347
Slaithwaite, England			6,000				6,000
Salford, England	5,000						5,000
Berlin, Germany			4,957				4,957
Ashton-under-Lyne, England	4,442						4,442
Chemnitz, Germany	4,117						4,117
Atherton, England	3,007						3,007
Alost, Belgium	2,421						2,421
Coventry, England					2,362		2,362
Hollinwood, England	2,362						2,362
Viersen, Germany	1,996						1,996
Barenstein, Germany	1,789						1,789
Whitworth, England	1,541						1,541
Thalwil, Switzerland	1,236						1,236
Lille, France	962				100		1,062
Cowes, England	1,030						1,030
Glauchau, Germany	1,010						1,010
Zittau, Germany						1,000	1,000
Belfast, Ireland	992						992
Dukinfield, England	679						679
Leigh, England	639						639

TABLE 16.—*Cotton yarn imported for consumption, 1914 (in pounds)*—Continued.

Export centers.	Imported via—						Total.
	New York.	Philadelphia.	Chicago.	Providence.	Connecticut.	Boston.	
Selbitz, Germany	636						636
Aix-La-Chapelle, Germany	560						560
Rochester, England	504						504
Wetzikon, Switzerland	437						437
Heusau, Switzerland	407						407
Trogen, Switzerland	171						171
Paris, France	109						109
London, England	51						51
Lurgen, Ireland	30						30
Walzenhausen, Switzerland	19						19
Total	4,531,412	1,000,375	132,939	138,489	213,437	230,775	6,247,427

TABLE 16a.—*Cotton yarn imported for consumption, 1918 (in pounds).*

Export centers.	Imported via—						Total.
	New York.	Philadelphia.	Chicago.	Providence.	Connecticut.	Boston.	
Manchester, England	2,792,503	691,164	62,600	119,704	75,496	29,638	3,771,105
Nottingham, England	373,653	16,899	127,305		17,458	553	535,868
Bolton, England	265,515	1,500		28,759		30,036	325,810
Bradford, England	23,721			62,286	8,600	3,307	97,914
Stockport, England	92,777				1,406		94,183
Mansfield, England	12,494	35,000	14,000			18,690	80,184
Macclesfield, England	49,752	29,605					79,357
Glasgow, Scotland	78,549						78,549
Bollington, England	35,600						35,600
Whitworth, England	31,438						31,438
Dewsbury, England	22,500						22,500
Middleton, England	8,571			7,765		3,518	19.854
Milnsbridge, England			14,000				14,000
Ashton-under-Lyne, England	11,927						11,927
Slaithwaite, England			11,500				11,500
Oldham, England	10,000						10,000
Stalybridge, England	5,206						5,206
Coventry, England					2,703		2,703
Liverpool, England						2,418	2,418
St. Gall, Switzerland	1,000						1,000
Derby, England	783						783
Belfast, Ireland	461						461
Total	3,816,450	774,168	229,405	218,514	105,663	88,160	5,232,360

These data, compiled direct from invoices, enable one to locate the export centers more precisely than is possible by any study of the Annual Declared Export Returns made by American consuls as the consular records show only that so much yarn was listed on the invoices certified to at each consulate and do not reveal the precise place of production or of export. There is a margin of inaccuracy even in taking invoice data, as a yarn merchant or shipper at an export center, such as Manchester, may receive the yarn from a mill at another point, have it processed or put up and record the shipping point as the place of origin. However, the invoice records are the most accurate available, and in most instances they disclose the real *place of origin.* Yarn assembled for shipment from a place in which there is an American consulate would probably show the shipping point as the place of origin, but most shipments are made direct from the mill where spun, doubled, or finished, and the point of manufacture would usually be shown on the invoice no matter where certified.

The tables show that Manchester is always the predominating influence in the American import trade in cotton yarns; supplying in 1914 about half, and in 1918 about three-fourths, of the total. Nottingham is the next largest source. Both of these cities are manufacturing centers, noted for the spinning and doubling of fine counts so that their exports of cotton yarns, unlike their exports of cloth, lace, and other manufactures of cotton, for the most part originate locally.

Export points, other than Manchester and Nottingham, vary from year to year in relative importance but normally include the following: Bradford, Barmen, St. Gall, Crefeld, Bolton, Macclesfield, Liverpool, Oldham, Baar, Ziegelbrucke, Stockport, Mansfield, Glasgow, Rorschach, Neuzingen, Elberfeld, Middleton, Plauen, Suchteln, Lyon, Bollington, Whitworth, and Dewsbury.

Manchester ships varying amounts of almost every type of cotton yarn, but the export of lace-curtain yarn is more than double that of any other. In 1914 Manchester exported to the United States, besides lace-curtain yarns, yarns for manufacture into hosiery, Levers lace, cotton cloth, mixed silks, hatbands, thread, velvet, harness twine, ribbon, and voile. In 1918 its exports included, besides lace-curtain yarns, yarns for sueded gloves, electrical winding, Levers lace, hosiery, mixed silks, velvets, hatbands, thread, voile, cotton cloth, embroidery, harness twine, and ribbons, respectively.

Nottingham in 1914 shipped mainly Levers lace and hosiery yarns, with small amounts of lace-curtain, hatband, and woven-label yarns; in 1918 it shipped mainly Levers lace, lace-curtain, and voile yarns, with small amounts of woven-label, cotton weaving, hatband, and hosiery yarns.

Bradford ships cotton yarn for weaving with mohair and with wool, also in normal times yarns for hosiery, mixed silks, velvets, and cotton goods. In 1914 Barmen shipped mainly Turkey-red yarn for towels, and polished yarns, with a small amount of embroidery yarns; St. Gall shipped embroidery yarns exclusively; Crefeld shipped mainly dyed hosiery yarns, with some yarns for mixed silks and for cotton weaving. Baar and Ziegelbrucke shipped yarns for mixed silks; Rorschach, Neuzingen, and Plauen shipped embroidery yarns; Suchteln shipped velvet yarns; Lyon shipped a little crêpe and velvet yarn; Elberfeld shipped blue-black hatband yarns.

Bolton in 1914 shipped in the main yarns for mixed silks and for curtains, also some voile and hosiery yarns; in 1918 yarns from that center were for voile and curtains, and the electrical and glove industries in the order named. Macclesfield ships yarns for lace, velvet and mixed silks. Liverpool shipped embroidery yarns in 1914 but does not appear in 1918 invoices. Oldham shipped lace and knitting yarns in 1914, and in 1918 only cotton weaving yarns. Stockport shipped lace yarns in 1914; its shipments in 1918 were mainly yarns for mixed silks and for hatbands. Mansfield ships lace and lace-curtain yarns. Glasgow shipped a small amount of Turkey-red yarn in 1914, mainly for embroidery with a little for towels; in 1918 the main item was Turkey-red yarn for towels, and there was some polished yarn. Middleton ships polished yarn, the 1918 imports included a small quantity of electrical yarn. Bollington shipped lace yarn in 1914 and yarn for mixed silks in 1918. Whitworth in 1918 shipped embroidery yarns. Dewsbury, famous as a shoddy center, shipped lace-curtain yarn.

Of the importing districts, New York receives about three-fourths of the total imports of cotton yarn. Philadelphia ranks second. Other importing districts vary from year to year as to relative importance; in 1918 Chicago ranked third, Rhode Island (Providence) fourth, Connecticut (Bridgeport and Hartford) fifth, and Massachusetts (Boston) sixth.

THE HANDLING OF THE IMPORT TRADE IN COTTON YARN.

Firms engaged in the European-American cotton yarn trade, either as exporters or importers, were fewer by a considerable number in 1918 than in 1914. The total volume of trade decreased, but the dropping out of so many firms raised the average amount handled by each firm. The number of invoices was much reduced though considerably larger amounts were covered by each invoice. The reduction was probably due to the less frequent sailings in war time, the decrease in number of buyers, and the fewer varieties of yarn required.

The following tabulation is indicative of the size of the business done by individual firms; there are included all exporters and importers who handled as much as 100,000 pounds in either 1914 or 1918. Both exporters from Europe and importers into the United States are listed according to the weight of yarn handled. The 1914 rank is used on the 1918 figures in order to show how the trade of various firms increased or decreased.

Exporters from Europe.				Importers into United States.			
1914		1918		1914		1918	
Pounds exported.	Rank.	Pounds exported.	Rank in 1914.	Pounds imported.	Rank.	Pounds imported.	Rank in 1914.
1,188,586	1	1,321,358	1	822,549	1	691,426	4
809,292	2	843,012	4	607,945	2	380,900	5
318,448	3	307,662	3	308,639	3	340,684	2
280,035	4	293,187	....	281,164	4	330,038	....
238,453	5	229,881	34	238,293	5	296,000	10
198,040	6	227,780	8	214,706	6	229,305	13
183,728	7	136,138	19	189,866	7	212,746	....
129,676	8	131,250	15	182,157	8	197,158	8
124,053	9	128,383	51	177,174	9	187,143	....
119,509	10	111,755	....	174,250	10	175,461	....
118,689	11	106,559	2	151,450	11	172,028	....
116,268	12			121,986	12	170,545	20
116,095	13			121,560	13	167,200	11
				118,689	14	158,500	3
				115,857	15	131,250	7
				103,068	16	117,310	9
				103,618	17	114,994	16
						110,725	....
						108,543	....
						106,559	1

Six spinners and doublers, located at Manchester, supplied 2,469,537 pounds in 1914; the same six mills supplied 2,969,640 pounds in 1918. This is 39.53 per cent of the 1914, and 56.75 per cent of the 1918 imports of cotton yarn as obtained in this investigation. In other words a half dozen Manchester mills supply from 40 to 50 per cent or more of the total American imports of cotton yarns.

It is seen that the same exporter ranked first in both 1914 and 1918. This one exporter, an English doubler specializing in the production of extra strong super lace-curtain yarns, supplied in 1914, 19 per cent, and in 1918 no less than 25 per cent of the total weight of the cotton yarns imported into the United States. The rank of the other exporters, also that of the importers, varied considerably in the two periods studied. For instance, the main importer in 1914 ranked twentieth in 1918, while the main importer in 1918 was only fourth in 1914. The fourth largest exporter in 1918 was a yarn agent who bought for the account of the fourth largest importer; neither of these were listed on any 1914 invoices. Exporters ranking twelfth and thirteenth in 1914 were German firms, as were also importers ranking twelfth and fifteenth in the same year. Other exporters recorded above were British and other importers American.

Imports of cotton yarn entered for consumption in 1914 were officially recorded as 6,853,235 pounds, of which detailed invoice data were obtained covering 6,247,427 pounds. It was found that the 6,247,427 pounds were shipped by 167 firms or individuals. Of these 87 shipped less than 5,000 pounds each. Eliminating these small occasional shippers there were 80 exporters who shipped a total of 6,125,967 pounds, an average of 76,575 pounds each. The total of 6,247,427 pounds was invoiced to 156 different individuals and firms. Of these 81 imported less than 5,000 pounds each. Eliminating these we find that a total of 6,126,957 pounds was imported by 75 firms, an average of 81,962 pounds each.

Imports of cotton yarn entered for consumption in 1918 were officially recorded as 5,687,641 pounds, and of these there was obtained detailed invoice data covering 5,232,360 pounds. It was found that the 5,232,360 pounds were shipped by 74 firms or individuals. Eliminating those shipping less than 5,000 pounds each, there were 54 exporters who shipped a total of 5,194,230 pounds, an average of 96,190 pounds each. The total of 5,232,360 pounds was invoiced to 65 firms or individuals. Eliminating those importing less than 5,000 pounds each, a total of 5,190,853 pounds was imported by 45 firms, an average of 115,352 pounds each.

The total handled by the numerous occasional shippers or receivers of amounts under 5,000 pounds a year is relatively so small that it may be disregarded. It is therefore correct to say that the European-American trade in cotton yarn was handled by 80 exporters and 75 importers in 1914 and by 54 exporters and 45 importers in 1918. Of the 80 exporters in 1914, 51 were British and handled 4,920,799 pounds; 19 were German and handled 754,609 pounds; 7 were Swiss and handled 353,153 pounds; and 3 were French and handled 97,406 pounds. All of the 54 exporters in 1918 were British.

The number of exporters who were producers, finishers, or middlemen, respectively, and the amounts handled by each class, was as as follows:

Cotton yarn exported to the United States from Europe.

Exporter.	Number of exporters.[1]	1914		Number of exporters.[1]	1918	
		Total pounds.	Per cent of total.		Total pounds.	Per cent of total.
Spinners or doublers	52	4,370,376	71.34	35	4,252,107	81.86
Dyers or finishers	6	436,710	7.13	1	58,500	1.13
Yarn merchants or agents	22	1,318,881	21.53	18	883,623	17.01
Total	80	6,125,967	100.00	54	5,194,230	100.00

[1] Includes all handling over 5,000 pounds each.

The above classification of invoice data brings out clearly the fact that British and Continental yarn merchants and agents play but a subordinate part in the handling of the cotton-yarn imports into the United States and that about three-fourths of the total is shipped by the producing mills.

The proportion of the imports bought direct by the consuming manufacturer, or purchased by him through an American intermediary, is brought out in the following tabulation:

Cotton yarn imported into the United States.

Importers.	Number of importers.[1]	1914		Number of importers.[1]	1918	
		Total pounds.	Per cent of total.		Total pounds.	Per cent of total.
Direct trade:						
Manufacturers—						
Lace-curtain	10	1,392,172	....	10	1,715,808	....
Silk	4	227,347	....	1	8,872	....
Lace	5	194,015	....	2	50,576	....
Velvet	6	181,648	....	4	116,360	....
Mohair	1	118,689	....	1	62,286	....
Thread	2	90,190	....	....	....	....
Towel	2	85,202	....	1	17,400	....
Embroidery	1	67,273	....	....	....	....
Hosiery and underwear	4	62,445	....	1	16,899	....
Shoe-lace	1	39,715	....	....	....	....
Wool	1	37,318	....	1	18,714	....
Cotton	1	23,010	....	1	212,746	....
Hatband	1	20,289	....	....	....	....
Sueded glove	....	....	....	2	295,686	....
Total	39	2,539,313	41.44	24	2,515,347	48.46
Indirect trade:						
Yarn agents and merchants	32	3,475,534	56.73	20	2,500,045	48.16
Forwarding agents	2	88,652	1.45	1	175,461	3.38
Converters	2	23,458	.38	....	....	....
Total	36	3,587,644	58.56	21	2,675,506	51.54
Grand total	75	6,126,957	100.00	45	5,190,853	100.00

[1] Includes all handling over 5,000 pounds each.

It is seen that yarn agents and merchants play a much more important part on the American end of the trade than on the European end. They are usually the most important import factor, but the large proportion of the trade that is handled direct by the consuming mills is striking, amounting in 1918 to nearly 50 per cent. The ultimate consumers, the mills using the foreign yarns, therefore import from 40 to 50 per cent of their requirements direct and purchase 50 to 60 per cent through yarn agents or merchants.

The foregoing table shows that small amounts are consigned to American forwarding agents and that some yarns are shipped to dyers, finishers, or converters. If the latter class be listed as consumers and the former considered as being for the account of yarn houses, which is the case in most instances, the following tables are illustrative of the proportionate amounts in 1914 and 1918 shipped by foreign spinners, yarn houses, and dyers to American yarn houses and American mills.

Cotton-yarn imports—Relative importance of various channels.

[Includes all handling over 5,000 pounds yarn each.]

Foreign exporters.	Total exports.		American importers.			
			Yarn agents and merchants.		Manufacturers (yarn users).	
	Yarn (pounds).	Per cent of total.	Yarn (pounds).	Per cent of total.	Yarn (pounds).	Per cent of total.
1914.						
Spinners and doublers	4,370,376	71.34	2,271,187	37.07	2,099,189	34.27
Yarn agents and merchants	1,318,881	21.53	940,477	15.36	378,404	6.17
Dyers and mercerizers	436,710	7.13	361,738	5.91	74,972	1.22
Total	6,125,967	100.00	3,573,402	58.34	2,552,565	41.66
1918.						
Spinners and doublers	4,252,107	81.86	1,929,554	37.15	2,322,553	44.71
Yarn agents and merchants	883,623	17.01	710,858	13.68	172,765	3.33
Dyers and mercerizers	58,500	1.13	58,500	1.13	....	....
Total	5,194,230	100.00	2,698,912	51.96	2,495,318	48.04

The proportionate amounts of the cotton yarn import trade in 1914 and in 1918 that were handled through the various channels is illustrated graphically in Chart C. This chart serves to bring out prominently the facts that American imports of cotton yarns are bought for the most part direct from the producing mill and that the American yarn house is the most important purchaser; it shows, however, that a large amount is handled without any intermediary—that is, direct from producing manufacturer to consuming manufacturer. In comparing the trade in 1914 with the smaller trade in 1918 the most striking feature is that the amounts exported by foreign mills and the amounts imported direct by American mills have scarcely changed at all, at least in total volume; the decline has been confined almost entirely to the indirect trade.

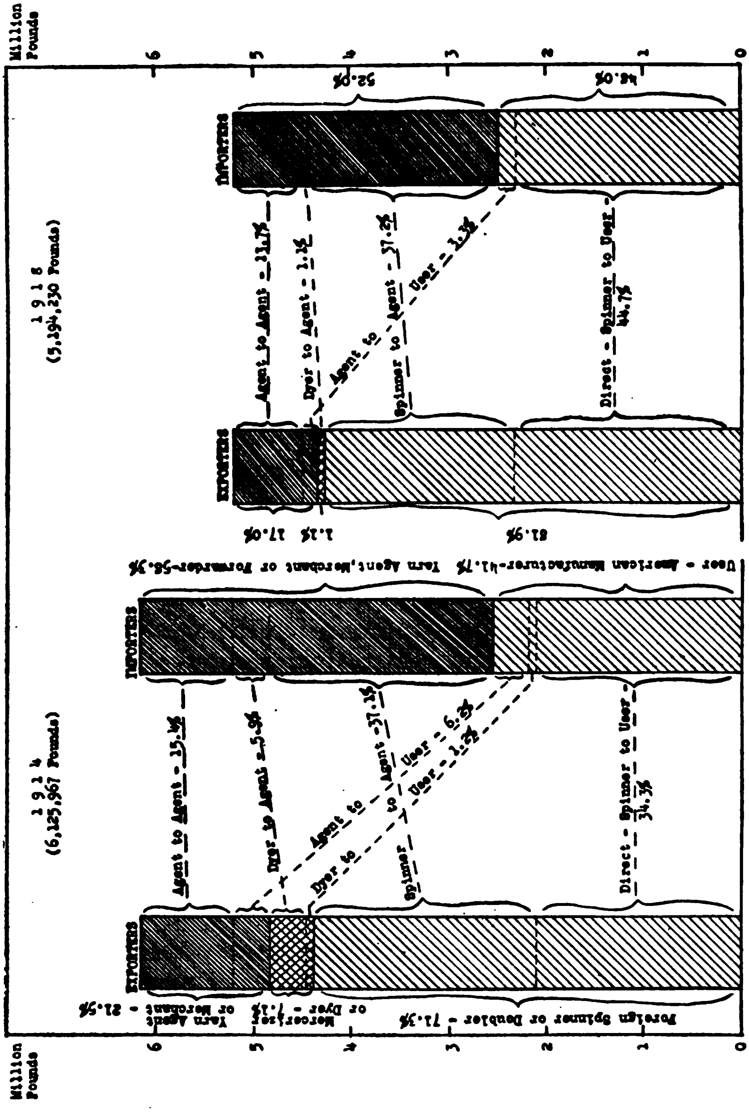
The handling of the cotton yarns required from abroad by various sections of the textile industry may be described more in detail as follows.

The lace-curtain industry is the largest importer but requires less than a dozen counts. The 10 lace-curtain mills import direct and are supplied almost entirely by one firm of British doublers. The curtain mills place occasional orders with other British doublers, rarely with British yarn agents.

The Levers lace industry imports about a third of its requirements direct from the British mills. These importers are largely firms that operate Levers lace machines in addition to lace-curtain machines. About two-thirds of the yarns required are bought by lace mills from American yarn houses which buy from British doublers and yarn houses.

Hosiery and underwear yarns are imported mainly through American yarn agents who buy from or act as representatives of British spinners or doublers. Four or five American mills buy direct but their purchases represent only a minor proportion of the trade. A small portion is handled through British yarn dealers selling to American yarn dealers. Nearly half of the glove yarn trade in 1918 was handled by one American yarn dealer who bought from one British spinner; the remainder consisted chiefly of purchases by two American glove manufacturers direct from British spinners.

CHART C.



IMPORTS OF COTTON YARN INTO THE UNITED STATES IN 1914 AND 1918.

Showing relative importance of trade direct and through intermediaries.

Of the 1918 trade in electrical yarns about 40 per cent was imported by a yarn merchant who bought from various British spinners through one agent at Manchester. About 25 per cent was sold by a British spinner through an agent representing him in the United States; and about 20 per cent was imported by an American yarn house which had established connections with one large firm of British spinners.

The trade in cotton yarns for mixed silks is largely through American yarn houses importing mainly from spinners or doublers, but is partly through European yarn houses. A smaller portion is imported direct by four or five silk mills from spinners abroad. Velvet yarns are usually imported by the velvet manufacturers direct from the foreign spinners; a small portion is handled through yarn houses in England and America. Voile yarns are largely imported direct, from mill to mill, but a portion is handled through yarn houses on either side. Turkey-red yarn is imported chiefly by American yarn houses from foreign dyers; a portion is imported from the dyers by American towel mills direct. Cotton-weaving yarns, not specified, are imported through various channels; some come direct, but the larger portion is from the spinner through American yarn houses. Weaving yarns for mohair are mainly direct, from mill to mill. Weaving yarns for wool are also chiefly from mill to mill, a small portion being indirect trade.

One hatband manufacturer imports direct from a foreign dyer, but the hatband yarns are imported, for the most part, through American yarn houses that buy mainly from the mills. Ribbon yarns are imported by yarn houses that buy partly from the mills and partly from foreign yarn houses. Woven label yarns are imported mainly by two yarn houses that buy partly from mills and partly from foreign yarn houses; two or three label manufacturers import a small amount direct. Polished yarns are imported almost entirely by yarn houses that buy mainly from firms making a specialty of this finishing process; a small amount is imported direct by three or four narrow-fabric firms.

The embroidery yarn trade is almost entirely through importing yarn houses that buy partly from doublers and partly from foreign yarn houses; a few large embroidery manufacturers in normal times buy direct. Sewings are mainly through yarn houses buying from foreign spinners or yarn houses; very little is imported direct by thread mills. Harness twine imports are mainly through yarn agents who buy from British doublers; two or three silk mills import their harness twine direct.

In regard to terms, the import trade in cotton yarn is on open account, and it is rare that drafts are sent with bills of lading attached necessitating payment before goods can be cleared. In general the importing manufacturer or importing yarn merchant receives a discount of 2 per cent for payment on the 10th of the following month, billing date of delivery, or 45 to 60 days net. In some instances, especially in the Continental shipments, the discount runs up to 3½ per cent or even more.

Importing yarn merchants maintain in general that they work on a margin of 10 to 15 per cent, and that they are satisfied with 5 per cent net profit per shipment, as they can turn over their money several times during the year.

LEADING IMPORTERS OF COTTON YARN.

The following firms are listed among the leading importers of cotton yarns:

Joseph Benn & Son., Greystone, R. I.
J. Bromley & Sons. Philadelphia, Pa.
Cheney Bros., South Manchester, Conn.
E. F. Drew & Co., New York, N. Y
Dundee Textile Co., Passaic, N. J.
Jos. J. De Long & Co., New York, N. Y.
R. A. Ely & Co., New York, N. Y.
Hughes Fawcett, New York, N. Y.
Marshall Field & Co., Chicago, Ill.
Julius Kayser & Co., Brooklyn, N. Y.
G. S. Lings & Co., New York, N. Y.
Ludwig Littauer & Co., New York, N. Y.
Manley & Johnson, New York, N. Y.
Jos. Meyer & Co., New York, N. Y.
The Merrill Silk Co., Hornell, N. Y.
North American Lace Co., Philadelphia, Pa.
Patchogue Mfg. Co., Patchogue, N. Y.
T. J. Porter & Sons, Philadelphia, Pa.
Quaker Lace Co., Philadelphia, Pa.
H. M. Remington, Philadelphia, Pa.
Louis Robison & Co., New York, N. Y.
Scranton Lace Co., Scranton, Pa.
Stern & Stern, New York, N. Y.
Thornley & Co., Providence, R. I.
Toy & Wilmerding, New York, N. Y.
Warwick Mills, Centreville, R. I.
Wilkes-Barre Lace Mfg. Co., Wilkes-Barre, Pa.

Of the 27 importers listed above 13 are manufacturers or ultimate consumers of the yarns they import; the other 14 are middlemen, acting either as yarn merchants or yarn agents.

THE AMERICAN EXPORT TRADE IN COTTON YARN

CHAPTER V.

THE AMERICAN EXPORT TRADE IN COTTON YARN.

THE PREWAR POSITION OF THE UNITED STATES AS AN EXPORTER OF COTTON YARN.

The three principal countries exporting cotton yarns, in normal times, are England, Japan, and India; the last two confine themselves chiefly to the Chinese market, whereas English yarns are distributed the world over. Germany, Austria-Hungary, and Italy are the next important group; they sell to other European countries and also cultivate the markets of the Levant and of South America. Small quantities are exported from the other industrial nations on the Continent—France, Belgium, Netherlands, and Switzerland, in the order named. Prior to the changes in trade currents brought about by the war, the United States hardly figured as an exporter of cotton yarn, despite the fact that in quantity of output it is by far the largest producer of cotton yarn, and in value of output scarce second to the United Kingdom.

This situation is largely attributable to several peculiar conditions attendant upon the cotton industry in the United States. While the industry has increased several-fold within the last 30 years, as measured in terms of capital invested, spindles operated, wage earners employed, or value of product, this remarkable expansion has been for the most part to meet the growing needs of the home market, with its population of over 100,000,000 and the largest per capita consumption of cotton goods of any nation. Of the total output of cotton manufactures by the United States in the last census year (1914), valued at over $700,000,000, about 93 per cent was sold in the American market and exports were confined to a limited number of lines and specialties.

Although cotton yarn is the result of a process of manufacture it is essentially the raw material of the weaving, knitting, and related industries. Under the prevailing methods of production in this country, whereby the cotton is spun and woven into cloth in the same mill, the industry has tended to become self-sufficient as well as self-supplying. More than 99 per cent of all the cotton yarn used in American mills is regularly spun here, and more than 75 per cent of all the yarn produced in the United States is used for further manufacture in the establishments where spun. The returns of the Federal census have regularly shown that not more than 23 per cent of the total volume of cotton yarn produced is intended for sale outside the mill, and this serves mainly to supply the domestic mills, particularly knitting mills, which do not spin their own yarns.

Unlike a number of other cotton manufacturing countries, notably Great Britain, Japan, and India, where a considerable part of the spinning industry is dependent for its prosperity upon export trade, the installation of weaving and knitting machinery in the United States has kept pace with the increase in spindles, with the result that there has been no large surplus of yarn that had to be sold abroad. American exports of cotton products have been mainly fully manufactured products, about half of our export prior to the war consisting of cotton cloth, and a large part of the balance of knit goods and other wearing apparel.

The relatively small share of the American cotton industry in the world trade in cotton yarn finds further explanation in the fact that, prior to the war, the wages of textile workers were appreciably higher in the United States than in the chief competing countries. Spinning costs were consequently higher and could not be made up, as in the case of weaving costs, by larger output through the use of more automatic machinery. This fact tended to deter the building of spinning mills for handling export trade, as is common in other countries, and such yarn as was exported was supplied by mills producing primarily for domestic trade.

THE DEVELOPMENT OF THE YARN EXPORT TRADE DURING THE WAR.

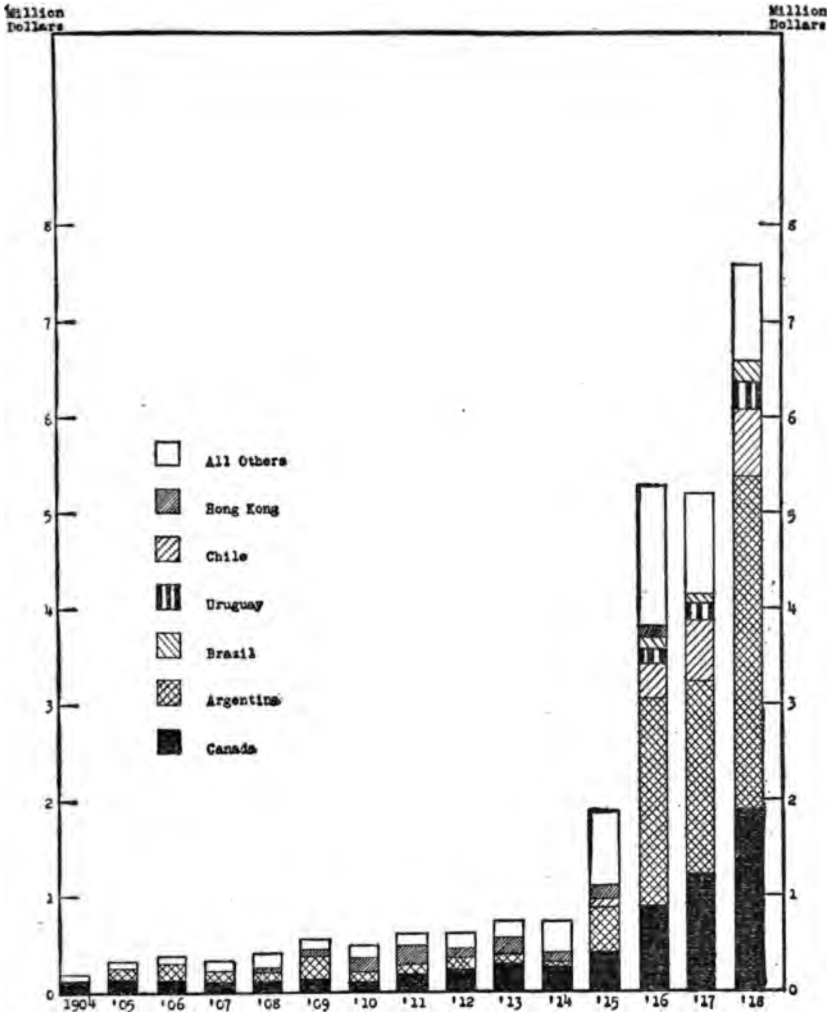
Table 17 traces the course of the American yarn export trade since 1904, indicating the value of the annual shipments and the principal markets supplied.

TABLE 17.—*Value of American shipments of cotton yarn.*

Fiscal year.	Total exports.	Canada.	New-foundland.	Argentina.	Chile.	Colombia.	Uruguay.	Brazil.	Hongkong.	All other.
1904	$172,286	$120,388	$26,028	$16,364	....	....	....	$1,490	$2,180	$5,836
1905	310,237	116,288	46,139	133,308	....	....	....	806	6,427	7,269
1906	365,452	117,325	48,218	162,153	$1,433	$1,385	....	1,058	22,737	11,143
1907	328,638	108,169	30,976	114,852	5,438	163	....	543	34,154	34,343
1908	400,600	108,991	70,899	85,406	6,348	2,039	$988	6,706	59,151	60,072
5-year average.	315,443	114,232	44,452	102,417	2,644	717	198	2,121	24,930	23,732
1909	551,062	118,608	59,964	247,806	6,858	9,700	3,890	2,382	51,904	49,950
1910	464,404	101,689	23,394	94,619	18,867	35,367	....	18,810	133,608	37,050
1911	606,551	163,826	13,276	96,718	31,577	39,055	1,978	5,514	210,090	44,523
1912	599,593	238,378	70,876	118,899	28,986	24,026	7,115	62	90,130	21,121
1913	718,423	295,427	54,660	88,813	18,050	32,242	3,393	17,266	168,678	39,894
5-year average.	587,808	183,586	44,434	129,371	20,868	28,078	3,275	8,807	130,882	38,507
1914	716,036	243,443	40,045	27,408	1,270	20,753	....	1,835	116,018	265,264
1915	1,886,476	400,226	93,561	475,528	73,681	29,376	14,444	24,800	151,612	623,248
1916	5,276,105	881,644	64,060	2,183,809	361,595	135,766	133,067	85,432	116,760	1,313,972
1917	5,195,559	1,220,892	107,319	2,005,538	655,058	329,094	167,845	109,581	11,360	588,872
1918	*7,571,338*	*1,900,561*	103,580	3,468,550	712,643	187,906	268,970	221,959	16,913	690,256
5-year average.	*4,129,103*	*929,353*	81,713	1,632,167	360,849	140,579	116,865	88,721	82,533	696,322

During the decade prior to the war, the value of the annual exports of cotton yarn had increased from less than $200,000 in 1904, when it was first recorded separately, to about $700,000 during the fiscal year 1913 and 1914. The total volume, however, was still quite small, amounting in 1914 to not more than 3,000,000 pounds a year.[1] In comparison with the total domestic production of over two billion

CHART D.



THE AMERICAN EXPORT TRADE IN COTTON YARN: 1904-1918.

Showing growth since 1914 and principal markets supplied.

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[1] Cotton yarn was not shown separately among the exports prior to 1904, and no record of weight was kept until 1918. Estimates of weight are based upon an assumed average price of 25 cents a pound, the *approximate prewar market price* for the average grade of yarn exported.

pounds, the amount exported constituted but a fraction of 1 per cent. The main prewar market was found in Canada, which normally took about a third of our exports, chiefly medium to fine yarns. Irregular shipments, chiefly of knitting yarns, had been made to Hongkong for a decade. Small quantities of coarse weaving yarns were also shipped to South America, mainly Argentina, Colombia, and Chile. Our export trade in cotton yarns prior to the war could hardly be called active, however, and it is significant that apart from Canada, trade with which more nearly resembles domestic business, no market had been cultivated to the point where American yarns were supplying any appreciable share of the import requirements.

With the outbreak of the war and the decline in yarn exports from Europe, particularly from the United Kingdom, Canadian and South American demands were increasingly diverted to the United States, and practically created an export trade in cotton yarn, which may be held if American cotton mills and exporting houses will but meet the particular needs and wishes of these markets. The strength of the demand may be measured by the striking growth in American yarn exports, from $716,000 in the year ending June 30, 1914, to nearly $2,000,000 in the first year of the war, and rising to over $5,000,000 during 1916 and 1917.

In 1918, the first year in which exports of cotton yarn were recorded by weight as well as by value, the total exports amounted to over 15,000,000 pounds, or considerably over twice as much yarn as we imported during the same year. In comparison with the total output of the domestic mills the exports in 1918 constituted less than 1 per cent and of the yarn produced for sale the amount exported made up only about 2.6 per cent. In value the shipments in 1918 amounted to seven and one-half million dollars, or over ten times the value of our yarn exports in the last year prior to the war. Only part of the increased value was due to the higher prices prevailing in 1918, and but for the shortage of shipping and restrictions imposed by the War Trade Board, beginning February 1918, upon the exportation of certain yarns, known as Government numbers, because needed for Army requirements, the volume of exports would have been considerably larger than recorded.

Moreover, under the unusual demand for Governmental needs, inability to deliver, as well as shipping restrictions, limited the exports of yarn in 1918. Thus, during the latter half of the year, the licenses granted by the War Trade Board for the export of cotton yarn covered requests to ship 14,073,683 pounds, valued at $9,967,356, which did not include certain fine yarns sent to Canada and requiring no license. Even these figures fall short of measuring the total volume of export orders placed with American mills and exporting houses, though they afford a closer indication than the actual quantities shipped during the period from July to December, 1918, which totalled about half the amount for which licenses had been secured—7,343,839 pounds, valued at $5,315,018.

The urgency of the demand for American yarns is further indicated by the fact that despite rapidly rising prices, orders increased. In normal times cotton yarn of the grade exported probably averaged about 25 cents a pound. The exports during the last half of 1917 averaged 44.3 cents a pound, for the next six months 58.7 cents, and for the last half of 1918 reached the unprecedented price of 72.4 cents a pound, or about three times the price paid prior to the war for approximately the same grade of yarn. The prices given are average prices at point of shipment, usually New York, and do not include the high cost of shipping which, during 1917 and 1918, added considerably to the landed cost to the importer in the foreign market. With the declaration of the armistice, and the removal of the Governmental restrictions on December 17, 1918, a large volume of yarn was released for export, and early records for 1919 forecast a phenomenal trade that should send the total for the year far above the record of 1918, and establish a definite place for American yarn in the new markets.[1]

ANALYSIS OF THE EXPANDED YARN EXPORT TRADE IN 1918.

PRINCIPAL MARKETS SUPPLIED.

Chart D shows graphically the course of the American export trade in cotton yarn since 1904, its rapid growth since 1915, and the principal markets supplied. Exports to Canada, the largest prewar buyer, more than tripled in volume, from 870,000 pounds (valued at $243,000) in 1913, to 2,851,000 pounds (valued at $1,900,000) in the fiscal year 1918. Much the larger outlet, however, was found in the newer markets of South America, which had formerly been supplied by the British, Belgian, German, and Italian cotton spinners. Of the total exports during 1918, amounting to 15,000,000 pounds and valued at seven and one-half million dollars, more than two-thirds in weight and nearly that in value was shipped to South America.

The best market was found in Argentina, which took about half of the total yarn exported—7,786,000 pounds. Chile was the next largest South American buyer, importing 1,470,000 pounds during 1918; smaller quantities went to Uruguay, Brazil, Colombia, and Ecuador. Lesser markets were found in Cuba, Central America, Newfoundland, and Australia. Except that sent Australia, and the unusual item of nearly half a million pounds to France, it is notable that the expansion of the American yarn export trade was practically confined to the Western Hemisphere.

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[1] Later statistics, received as we go to press, show that exports of cotton yarn in the fiscal year ending June 30, 1919, amounted to 19,217,500 pounds, valued at $13,887,287.

Table 18 compares the shipments of American yarn into the principal purchasing countries in 1913 and in 1918, and indicates what proportion of the total yarn import requirements of each country was supplied by the United States. It is assumed that the 1913 figures there given represent approximately the normal volume of annual importations.

TABLE 18.—*Markets for American cotton yarn.*

[Source: Official annual trade returns of the various countries, and export records of United States, supplemented by estimates where necessary, as indicated.]

Country.	Normal import requirements (total imports in 1913).		Imported from United States (1913).		Imported from United States (1918).			Share of requirements supplied by United States (per cent of weight).	
	Quantity (pounds).	Value.	Quantity (pounds).	Value.	Quantity (pounds).	Value.	Average price per pound.	1913	1918
North America				$357,077	3,831,582	$2,195,776	$0.573		
Canada	3,467,420	$1,446,495	[1] 869,818	[1] 316,421	2,850,613	1,900,561	.667	25	82
Under 40s	759,437	214,539	395,605	102,160					
40s and finer	2,707,983	1,231,956	474,213	214,261					
Newfoundland	(2)	(2)	(2)	54,660	235,721	103,580	.439		
Cuba	704,588	[3] 429,174	(2)	2,916	158,598	111,925	.706		22
South America				160,117	10,737,982	4,933,338	.459		
Argentina	13,814,277	2,620,211	575,907	88,813	7,785,578	3,468,550	.446	4	56
Uncolored yarn	9,211,081	1,612,754	[4] 159,681	(2)					
Colored yarn	4,603,196	1,007,457	[4] 416,226	(2)					
Chile	5,450,357	1,355,226	(2)	18,050	1,470,492	712,643	.485		27
Brazil	4,148,250	1,184,045	(2)	17,266	331,650	221,959	.669		8
Uruguay	[5] 1,031,700	343,677	(2)	3,393	608,532	268,970	.442		59
Colombia	[6] 1,500,000	(2)	(2)	32,242	395,492	187,906	.475		20-25
Ecuador	(2)	[3] 100,485	(2)	295	109,430	55,071	.503		25-30
Europe				10,336	721,581	249,889	.346		
United Kingdom	11,568,620	2,726,077	(2)	9,802	123,891	5,564	.432		
France	6,018,998	5,497,476	(2)	40	443,232	153,761	.346		
Switzerland	7,887,397	4,069,684			202,047	62,074	.307		
Scandinavia	10,896,145	3,213,142			60,029	24,501	.410		
Asia				170,363	111,044	100,066	.901		
Hongkong	(2)	[7] 1,000,000	(2)	168,678	26,221	16,913	.645		
Oceania				20,367	166,489	89,392	.537		
Australia	(2)	1,220,154	(2)	7,070	136,150	75,676	.556		
Philippine Islands	3,561,976	897,059	(2)	13,297	30,074	13,597	.452		
Africa—British South Africa	(2)	(2)	(2)	163	2,593	2,877	1.11		
Grand total			[8] 2,875,000	718,423	15,121,682	7,571,338	.500		

[1] Canadian import records, fiscal year ending Mar. 31, 1913.
[2] Data not available.
[3] Includes cotton thread.
[4] Weight as shown by Argentine imports; values not shown here because official, not actual.
[5] Import records not available; total represents combined exports to Uruguay from principal countries.
[6] Minimum estimate; see text.
[7] Import requirements estimated; see text.
[8] Weight estimated from value assuming approximate price of 25 cents for average grade of yarn exported.

It will be observed that the only market in which American yarns were of any importance prior to the war, was that of the neighboring country of Canada, and that yarn shipments from the United States made up 25 per cent of the total yarn imports into that country.

Largely because of the high prices asked for British yarns, in 1918 American spinners supplied over 80 per cent of the import requirements of the Canadian mills.

In the Rio Plata territory, where in 1913 American yarns made up only 4 per cent of the total imports, by 1918 they supplied between 50 and 60 per cent of the normal import requirements of the local weaving and knitting mills. A smaller yet substantial hold had been secured in the markets of Chile and Colombia, American yarns supplying about one-quarter of the total normal imports. An appreciable share of the Cuban imports and a smaller percentage of the Brazilian and Australian needs were in 1918 supplied by American mills, though the total quantities were not considerable. Again it appears that American spun yarns secured no measurable hold in any markets outside the Americas, even during the period when European competition was severely curtailed.

REQUIREMENTS OF PRINCIPAL MARKETS AND CHARACTER OF EXPORTS.

To judge more closely of the nature of the newly expanded export trade, an inquiry was instituted among the principal concerns to whom licenses were granted by the War Trade Board for the export of cotton yarn during the six months of July to December, 1918. Information was ascertained as to the character of the yarn shipped to each country, the purposes for which intended, how put up and packed, and the outlook for the retention of the trade when normal competitive conditions are restored. The results of this inquiry, correlated with information from other sources as to the import requirements of the various markets, are here briefly analyzed.

Canada.—Trade with Canada is in many respects not unlike domestic business, inasmuch as the same language, units of value, methods of shipment, and even identical credit terms obtain between merchants across the border as within the United States.

Canada is still essentially an importer of cotton goods, the growing domestic manufacture not yet being equal to the demands of the Canadian market, and the mills confine themselves largely to cloths of coarse and medium grades, low-priced hosiery, and the like. The production of cotton cloth is concentrated in the hands of a few large concerns, that spin not only the bulk of the yarns required for their weaving department, but also a surplus of low-count yarns for sale. The yarn import requirements of Canada are therefore chiefly for the knitting mills, for use in the manufacture of hosiery and underwear; small quantities are imported for use in weaving, in braiding, and in thread making.

Fine yarns over 40s constitute the larger part of the imports. These are admitted free of duty and are spun only in small amounts by the domestic mills. A total of two to three million pounds of fine yarns has been imported annually into Canada in recent years, of which American spinners supplied from 20 to 25 per cent, and Great Britain most of the balance. Fine yarns—i. e. over 40s—regularly constituted over half in value of the annual yarn shipments from the United States to Canada. During the later years of the war the larger part of this trade was supplied by the United States. During the 10 months dating from March, 1918, imports of fine yarns into Canada amounted to 1,904,026 pounds, of which 1,350,412 pounds (valued at $1,631,795) originated in the United States.

The principal fine counts imported from the United States in the latter half of 1918 were 40s, 50s, and 60s 2-ply mercerized yarns, partly carded, but mainly combed Peeler, for use in the knitting mills. Smaller quantities of fine yarns were imported from American spinners by the Canadian thread-making plants, branches established by the British thread combine to supply a portion of the Dominion demands locally. These were mainly 40s to 60s, 3 and 4 ply gray combed yarns of Egyptian or sea-island cotton. It is notable that the largest part of the fine yarns shipped into Canada from the United States were mercerized.

Coarse and medium yarns—that is, of counts under 40s—pay a general duty of 25 per cent ad valorem when imported from the United States and a preferential rate of 17½ per cent when of British manufacture. The requirements of this class of yarns—described in the import statistics as "knitting, hosiery, or other yarns"—have been increasing with the expansion of knitted-wear manufacture in Canada in recent years; the total annual imports increased from half a million pounds during the fiscal year 1912 to over two million pounds in 1917.[1] Despite the handicap of a higher import duty than on British yarns, American spinners regularly supplied about half of the Canadian imports of knitting yarns of counts under 40s. During the war years, the largest part of this growing trade was supplied by the United States, the records for 1917 showing 1,700,000 pounds or fully 80 per cent of the total imports as of American origin. This may be accounted for in part by the factor of proximity and consequently the quick deliveries possible from the New England spinning mills to the Canadian knitting mills, most of which are located in the southeastern Provinces of Ontario, Quebec, and New Brunswick, adjacent to the United States.

An increasing share of the small quantity of polished or glazed yarn imported for use in the manufacture of shoe laces is also being supplied from the United States. These, as well as the fine yarns, are admitted into Canada free of duty. Shipments of American polished yarns range from 16s to 40s, single and 2-ply, mainly the latter, and are usually of carded upland cotton, and more often dyed as well as glazed.

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[1] *A small quantity of* the coarse yarns imported was used in the weaving of cotton duck.

Argentina and Uruguay.—Argentina and the adjacent republic of Uruguay, together forming what is known as the Rio Plata, or River Plate, territory, constitute the largest South American market for cotton yarn. Imports in 1913, the last normal year prior to the war, amounted to approximately 15,000,000 pounds, valued at $6,000,000. About two-thirds of the total was imported in the gray, Great Britain supplying the largest share. Italy, Germany, Belgium, and the United States normally shipped smaller quantities.

Cotton spinning has not thus far been successfully carried on in Argentina, except in a small way, and in Uruguay not at all. The yarn imported goes to supply the local weaving and knitting mills. The knitting mills have been particularly successful, are now considerable in number, and have come to supply a large part of the domestic market, particularly on knit underwear. The duties on cotton yarn imported into Argentina, which takes 14,000,000 of the 15,000,000 pounds normally imported into the Rio Plata region—are quite low. Although ad valorem in form (5 per cent), since the valuations are fixed by official decree they have the effect of a specific duty of about a cent a pound irrespective of fineness. The import duties into Uruguay, the lesser market, are considerably higher.

Prior to the war American yarn formed an inconsiderable part of the total amount imported into the Rio Plata territory—less than 5 per cent—the value of yarn shipments to Argentina averaging $102,000 during the years 1904–1908 and $129,000 during the five-year period 1909–1913. Practically nothing was sent to Uruguay.

With the curtailment of European shipments during the war, orders for needed supplies were necessarily directed to American houses, with the result that the average annual shipments during the five years 1914–1918 rose to $1,749,000 (Argentina $1,632,000, Uruguay $117,000). The largest shipments were made during the fiscal year 1918, when 7,786,000 pounds of cotton yarn, valued at $3, 469,000, were exported from the United States to Argentina, and 609,000 pounds, valued at $269,000, to Uruguay. As seen from Table 18, imports of American-spun yarns into the Rio Plata countries supplied from 50 to 60 per cent of the total import requirements as judged by the last normal year, 1913.

The yarns shipped to Argentina and Uruguay by American houses during 1918 were chiefly for two purposes:

(*a*) *Knitting yarns.*—The yarns for this purpose were 7s to 30s carded yarns, mostly singles, of soft twist, for hosiery and underwear; more often gray, though some was bleached or dyed; chiefly of middling to good middling American cotton. While shipments were reported of fine knitting yarns—40s, 50s, 60s, and up to 80s, single and 2-ply, of Peeler cotton, including "mock Egyptian"—most of the yarn was of numbers 8, 10, 12, 15, 20, 24, and 30 gray carded singles of upland cotton. Very little combed or mercerized yarn is reported.

(*b*) *Weaving yarns.*—The yarns for weaving were of coarser count, mainly 7s to 20s, 2 and 3 ply warp twist. The largest part of the yarn was carded and imported in the gray, no combed yarns being reported and only small quantities dyed, with logwood or sulphur black. The yarns were mostly of middling to good middling American uplands, only a small quantity being described as of Peeler cotton. The principal numbers for weaving were 7/3, 8/2, 8/3, 8/4, 8/5, 10/2, 10/3, 12/2, 12/3, 14/2, 15/3, 16/2, and 20/2. Only a slight amount was finer than 20s, and those were 30/2 and 40/2.

These yarns are used partly in the weaving of coarse cloths—ducks and drills—but chiefly in the making of alpargatas, a canvas-top shoe with a jute sole used largely by Argentine laborers in country districts. One firm, which shipped over a million pounds of yarn to the River Plata region in 1918, reported that in buying this American yarn it was acting as agent for British firms that own large factories in Buenos Aires and Montevideo for the manufacture of alpargatas.[1]

Chile.—Chile has in the last three years become the second largest South American buyer of cotton yarn from the United States. Local conditions are not reported favorable to an extensive domestic industry and prior to the war the cotton goods required by Chileans were largely imported from Great Britain, Germany, and Italy. Imports of cotton yarn are confined to the requirements of the few weaving and knitting mills making undershirts, gray goods, and coarse flannels.

The volume of annual yarn imports into Chile fluctuates, and in the last normal year prior to the war totaled 5,450,000 pounds, valued at $1,355,000. Germany, Italy, Belgium, and Great Britain were the chief sources of yarn imports. The largest weaving mill in Chile is owned by Belgians and the largest knitting mill by Italians, who naturally prefer to import from their home countries. American yarn shipments to Chile prior to the war were slight, averaging only $20,000 a year during 1909–1913, or less than 1 per cent of the total Chilean imports. The six months credit demanded by buyers was said to be one of the chief obstacles to a larger American trade.

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[1] Advice is received during writing of a modern cotton-spinning factory being started in Buenos Aires under the name of Compañia Hilanderia Argentina, to manufacture 2 and 3 ply yarns, average size 10s, using ring spinning machinery. The commercial attaché at Buenos Aires reports, under date of Jan. 29, 1919, that the full equipment for this factory has been shipped from the United States and that this is the first time that American cotton-spinning machinery will have been brought into Argentina. The capacity of the plant is planned for only 1,000 kilos a day, however, and the total annual output of some 600,000 pounds would supply only a small part of the total yarn requirements of the local mills.

With the curtailment of European shipments, inquiries were made for American yarn in larger quantities. A New York exporting house, which supplied a large part of the 1918 exports to Chile, reports that it went into the line at the request of its agent at Valparaiso. Yarn shipments from the United States to Chile rose from almost nothing in 1914 to $362,000 in 1916 and to double that in 1918, $712,643. Assuming the 1913 total to represent the normal import requirements of the local mills, American exporters supplied, in 1918, 25 to 30 per cent of the total volume, and they report that they were able to fill only a part of the orders received. Cotton yarn for weaving and similar purposes is admitted free of duty into Chile.

The American yarn shipments to Chile during 1918, amounting to 1,470,492 pounds, valued at $712,643, were made up, as in the case of the Rio Plata region, of two kinds: (*a*) Knitting yarns, 6s to 30s single carded yarns, mainly unbleached, and (*b*) weaving yarns, 8s to 20s singles and 16s to 36s 2-ply carded, mostly gray but partly dyed.

Brazil.—Brazil is one of the smaller cotton-growing areas of the world but cotton manufacturing is the most important industry of the country. While wages, machinery, and all costs of production are exceptionally high in Brazil, owing to the expense of transportation and the high taxes imposed in a variety of ways, an excessive tariff on cotton goods has been maintained to stimulate local cotton manufacturing. As a result of this protective policy, the domestic cotton mills have expanded and supply at a high profit the larger part of the Brazilian market on cotton cloth, especially the coarser grades; the finer goods continue to be imported, mainly from Great Britain and Germany.[1]

As in the United States, most Brazilian mills carry through the processes from the raw cotton to the finished cloth, and so depend upon imports for only a small part of the yarn required in manufacturing. The imports of cotton yarn have been increasing in recent years, however, and in 1913 amounted to 4,148,250 pounds, valued at $1,184,045. About half of the total was supplied by British spinners and most of the balance by Germany and Italy.

The share of the United States in this trade prior to the war was slight and fluctuating, amounting to $17,266 in 1913, and averaging $8,800 during the five years 1909–1913. The exports of cotton yarn from the United States to Brazil during 1917–18, although still not large, had increased considerably, from not over 60,000 pounds in 1913, to 331,650 pounds, valued at $221,959, in the fiscal year 1918.

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[1] In 1916 there were regularly working in Brazil 250 cotton mills, operating 1,464,000 spindles and 50,000 looms, and employing 73,000 hands. The aggregate capitalization of the factories was given at $78,756,000, and the annual production amounted to 261,520,700 square yards, valued at $59,783,750. (Commerce Reports, Aug. 4, 1916.)

Although the American yarns did not constitute in 1918 as much as 10 per cent of the total normal import requirements of Brazilian mills, the fact that American cotton yarn had become known to any extent in a market hitherto shut in by the tariff, and with its import needs largely preempted by European houses, constitutes a distinct gain and is significant of potential further expansion.

The principal yarns shipped by American firms to Brazil in 1918 were 30s, 40s, 50s, and 60s, single and ply, of combed Peeler cotton. The largest part was unbleached, and so far as known intended chiefly for the local knitting mills.

Colombia.—Only a small amount of cotton is grown in Colombia and that is of irregular quality. Cotton manufacturing is carried on in a number of scattered weaving and knitting mills, a large part of whose yarn requirements were normally supplied by imports from England. No exact figures are available as to the volume of cotton yarn imported, but reports of American consuls in Colombia indicate an annual consumption exceeding one and one-half million pounds.[1] Import duties into Colombia were fixed by the law of 1913 at 3 cents per pound for unbleached yarn, 4.5 cents for bleached, and 5.9 cents per pound for colored yarns.

The principal yarns in use are reported to range from 6s to 20s, the bulk of the yarn used in the knitting mills being 8s and 12s single. Of the total imports only a small part prior to the war was supplied from the United States—averaging $28,000 in the five years 1909–1913. This has been increased to an average of $140,000 during the five years 1914–1918, the largest shipments being made during 1917, valued at $329,000. American yarn exports to Colombia during 1918 amounted to 395,492 pounds valued at $187,906, and probably constituted 20 to 25 per cent of the total normal yarn imports of Colombian mills. The principal yarns reported shipped by American houses in 1918 were 7s, 16s and 18s single, and 10s, 20s, and 40s 2-ply, mainly gray carded yarns on cones.

Hongkong.—For a decade prior to 1916, American cotton yarns found a good demand in the British port of Hongkong, in southern China; this was practically our only yarn outlet in the Eastern Hemisphere. Since the introduction of the first knitting machinery into China about 1906, by an enterprising American concern, Hongkong has been a leading manufacturing and distributing center for cotton knit goods. A first-hand report early in 1919[2] indicates that Hongkong contains more than 50 per cent of the knitting machinery in China and that local knitters alone consume more than a million dollars' worth of knitting yarn annually, most of which is imported.

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[1] Report of Consul Manning, Barranquilla, June 22, 1915.

[2] "The knitting industry of Hongkong" in Cotton for February, 1919, by Ben Y. Lee, teacher of cotton spinning and economics at Nan Tung Textile College, Nan Tungchow, Kiangsu, China.

While the United States has had no share in the immense Chinese import trade in coarse weaving yarns, which is supplied chiefly by Japan and India, the Americans early secured a hold in the trade in better spun yarns of finer quality for knitting. The annual exports of cotton yarn from the United States to Hongkong averaged $130,000 during 1909–1913, and in the highest year, 1911, exceeded $200,000. Since 1916, however, shipments from this country have practically ceased and the growing trade has gone over to the Japanese. This is attributed to the great delay in transit unavoidable during the war because of shipping difficulties, and to the increased competition from Japanese spinners who, in addition to proximity, have the advantage of lower price arising from cheaper labor and materials and more direct methods of selling.

American yarn is said to be preferred, however, by Chinese knitters because it runs freely and does not break easily. The American consul at Hongkong[1] confirms the report that "there is a strong disposition to break away from the hold the Japanese yarns have obtained on the markets in the past two years and return to higher grade yarns," and declares that "were normal conditions obtaining at the present time, it seems probable that American manufacturers would have little difficulty in securing their old trade." The greatest demand in 1918 was reported to be for socks knitted from 12s, 16s, and 20s, because of the scarcity and high price of better grades, although when finer yarns were to be had from the United States or Great Britain, underwear and socks of higher quality were sold. The bulk of the recent business has been in 12s to 30s from Japan, 12s forming most of the imports. But the product of the factories using Japanese yarns is described as distinctly inferior in quality, and as fine as 60/2 ply English and 80/2 ply mercerized American yarns have been used in the Hongkong knitting mills, and with easier prices and better deliveries are expected to be used again.

Miscellaneous.—Of the smaller exports to other countries, as detailed in Table 19 for the years 1913 to 1918, little could be ascertained as to the precise character of the yarn shipped. The small Newfoundland and Labrador requirements, mainly for fishing lines and nets, have been supplied by American spinners for many years. The shipments averaged about $45,000 a year prior to the war and increased to $82,000 during the five-year period 1914–1918; much of the increase in value was doubtless due to the higher prices prevailing in recent years. American shipments to Newfoundland during 1918 amounted to 235,721 pounds with a value of $103,580.

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[1] Report of Consul General George E. Anderson, in Commerce Reports, Nov. 21, 1918.

TABLE 19.—*Value of exports of cotton yarn from United States during fiscal years 1913 to 1918, by continents and principal countries.*

	1913	1914	1915	1916	1917	1918	
						Quantity (pounds).	Value.
Total exports	$718,423	$716,036	$1,866,476	$5.276,105	$5,195,559	15,121,682	$7,571,338
Exported to:							
North America	357,077	288,684	526,654	1,194,557	1,524,837	3,831,993	2,195,776
Canada	295,427	243,443	400,226	881,644	1,220,892	2,850,613	1,900,561
Newfoundland and Labrador	54,660	40,045	93,561	64,060	107,319	235,721	103,580
Cuba	2,916	3,034	8,667	30,056	103,827	158,598	111,925
Haiti	....	....	155	107,782	366	8,400	4,323
Central America	2,159	1,800	22,560	95,496	62,498	47,852	94,266
South America	160,017	51,493	626,394	2,919,490	3,319,856	10,737,982	4,933,338
Argentina	88,813	27,408	475,528	2,183,809	2,005,538	7,785,578	3,468,550
Chile	18,050	1,270	73,681	361,595	655,058	1,470,492	712,643
Uruguay	3,393	....	14,444	133,067	167,845	608,532	268,970
Brazil	17,266	1,835	24,800	85,432	109,581	331,650	221,959
Colombia	32,242	20,753	29,376	135,766	329,094	395,492	187,906
Ecuador	295	105	546	5,745	4,694	109,430	55,071
Europe	10,336	17,244	282,099	974,171	247,845	721,581	249,889
United Kingdom	9,802	15,066	32,860	560,561	53,039	123,891	5,564
France	40	1,048	141,281	226,843	32,193	443,232	153,761
Switzerland	....	....	175	1,200	28,842	202,047	62,074
Scandinavia	....	....	72,345	84,650	79,371	60,029	24,591
Asia	170,363	117,200	153,735	119,221	36,822	111,044	100,066
Hongkong	168,678	116,018	151,612	116,760	11,360	26,221	16,913
China	1,685	1,182	2,123	2,461	17,729	80,386	81,653
Oceania	20,367	240,450	273,007	67,813	66,651	166,489	89,392
Australia	7,070	3,494	11,599	56,832	37,072	136,150	75,676
Philippine Islands	13,297	236,704	261,408	8,266	28,973	30,074	13,597
Africa—British South Africa	163	965	4,587	741	148	2,593	2,877

Yarn exports to Cuba were not material until 1917, the 1918 shipments totaling 158,598 pounds, valued at $111,925. The principal yarns reported as shipped in 1918 were bleached carded yarns, 14s to 44s, mostly single, for towel making. There is little cotton manufacturing in Cuba and the yarn requirements are small.

Exports of cotton yarn from the United States to Australia have been increasing, though the total shipments are still inconsiderable. Shipments during 1918 amounted to 136,150 pounds (valued at $75,676), and are reported to consist of coarse unbleached ply yarns to be used in the making of bags for wheat. Australia is comparatively a minor market for cotton yarn.

Irregular shipments of cotton yarn to Europe have appeared in the export records of the last few years, notably to France and the United Kingdom; small amounts have gone to Switzerland and the Scandinavian countries. The fact that shipments have been spasmodic and were undoubtedly occasioned by the unusual conditions in the cotton manufacturing industries of Europe, makes it doubtful if these are to be regarded as normal outlets for American yarn.

METHODS OF MARKETING.

As suggested in another connection, exporting to Canada is in most respects not unlike domestic business, and most of the yarn trade with Canada is carried on as directly as trade within the United States. The American spinning mill or the yarn agent, usually located in New England or Philadelphia, sells and ships directly to the knitting mill, thread factory, or similar concern, which uses the yarn in further manufacturing. Likewise, in methods of putting up and packing domestic practices prevail.

It is understood that when the mill product is sold through a yarn agent or commission house a commission of 5 per cent is paid and a 3 per cent discount is allowed, so that the spinning mill actually receives only about 92 per cent of the nominal selling price. Some mills sell through agents at less expense and a few sell direct.

On the other hand the domestic spinning mills have almost no direct share in the export trade with Latin America, which has come to be the chief yarn market for the United States. A small part of the business is done by New York or Boston yarn agents or commission houses acting for the mills, but the bulk of the yarn trade with buyers in those markets is carried on by large general exporting or foreign trading houses, located in New York or Philadelphia, chiefly the former city. Most of these houses maintain branch offices or representatives in the principal Central and South American cities, through whom the inquiries are made and the orders placed. A minor share of the purchasing is done by firms acting as buying agents for South American concerns.

The fact that American spinners do practically none of their export business with the Latin American countries direct, and very little through their own agents, is important in that the lack of direct contact with the consumers or importers at the other end tends to keep the American mills out of touch with the precise needs and preferred requirements of their foreign customers. It may explain the failure to develop the valuable and stable trade connections which mark the British trade, and also much of the dissatisfaction with American yarn in the past, either in regard to the quality of the shipments or the practical details of packing, delivery, and the like.

The comparatively small volume of the individual export shipments or the necessity of being familiar with the details of shipping, credit arrangements, and foreign tariffs may make direct exporting undesirable for spinning mills whose business is mainly domestic. Much of the advantage of direct exporting could be secured, however, through closer cooperation between the mills and the exporting houses or shippers. American mills desiring export business regularly at a competitive price should show a willingness to meet the requirements of the foreign buyers. It is charged that in prewar days "the majority of American mills only wanted export business as a special outlet for any surplus of goods which were not sold to the domestic trade," and export houses declare that if this attitude be continued after the war "we are going to lose ground."

The yarn export trade is now concentrated in the hands of a limited number of American concerns. Thus during the six months from July to December, 1918, licenses were granted by the United States War Trade Board for the exportation of 14,000,000 pounds of cotton yarn, valued at nearly $10,000,000. There were in all 163 persons or firms represented among those seeking licenses to export yarn, but 90 per cent in volume of the total business was being done by 26 concerns, of which only two were cotton-mill commission houses, the rest being general trading houses.[1] The shipments of five large general exporting houses amounted to 7,850,000 pounds and made up 56 per cent of the total volume of cotton yarn for which licenses were requested. The six months' business of each of the five leading concerns was valued at over half a million dollars, and three showed amounts exceeding a million dollars.

The list of concerns in the importing countries to whom the yarn was to be consigned, showed the handling of the foreign buying to be noticeably different from that of the American exporting. The trade was more widely distributed, nearly 300 firms being represented among the consignees, distributed from Argentina and Chile to Canada, Cuba, and Australia, and even to Sweden and Switzerland. There were 37 concerns whose purchases during the last half of 1918 amounted to 100,000 pounds or more. Moreover, the larger part of the importation was done directly, either by the mills or manufacturing concerns that are the ultimate consumers of the yarn, or through trading companies or merchants buying for the mills. In a number of instances the yarn was consigned to a general merchant, or to the foreign agent or branch of the New York trading house that exported the yarn, for further sale or distribution. The prominence of the manufacturers, however, as direct importers was a striking fact, indicative of the direct relation of the consumers of the yarn to their sources of supply.

OUTLOOK FOR RETENTION OF RECENTLY EXPANDED EXPORT TRADE.

It is the general expectation in the trade, if statements of opinion to the Tariff Commission by a considerable number of American concerns engaged in the exportation of cotton yarn be accepted as representative, that the largest part of the expanded export trade developed during the war can and will be retained in peace times. This applies particularly to the markets of South America.

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[1] *A list of the leading exporters of* cotton yarn during 1918 is shown at the close of this chapter, p. 200.

Prewar hindrances to yarn exports.—It will be recalled that prior to the war the United States hardly figured as an exporter of cotton yarn. While the lower prices that could be quoted by European spinners were undoubtedly a factor in keeping American yarns out of certain markets, a more controlling influence seems to have been the fact that American cotton mills made little effort prior to the war to cultivate foreign markets for their products. This was due in part to the conditions described earlier in the chapter, notably the self-supplying and self-sufficient character of the American cotton industry, but more largely, it appears, to the general disinclination of American spinning mills to cater to the particular requirements of foreign markets—in such matters as put-up, packing, and terms of payment—so long as the home market was capable of absorbing their full product. As a corollary to this situation, South American mills or their buying representatives felt little prompted to place their orders with United States houses, so long as supplies were readily available from their established sources—the British, German, Italian and Belgian spinners—who were accustomed and willing to meet their special requirements.

Matter of export packing.—Probably the most troublesome requirement in the cotton-yarn trade has been the matter of packing. Yarn on cones or cops is generally packed in cases. The larger part of the yarn, particularly weaving yarn, is put up in skeins and baled. European manufacturers are accustomed to put up their skein yarn in 10-pound bundles, each wrapped in paper, and 40 such bundles compressed into a burlap-covered bale of 400 pounds. This method of packing affords protection against the soiling or damaging of the yarn in transportation, particularly to interior points, and is especially desirable when the yarn is to be handled in small quantities or retailed for home weaving. South American importers have come to prefer it, and to expect also from United States firms that their skein yarns come wrapped in individual 10-pound bundles before baling. Such is not the practice in domestic trade, and export orders have been only incidental to the larger domestic business. The unwillingness of the American mills to put up the yarn in the form required of the exporting houses by their clients has been the cause of considerable dissatisfaction, and one of the chief drawbacks to the extension of American yarn trade in South America.[1]

Related to the problem of bundling is that of the size of bales. It is reported that American spinners, as a rule, will not guarantee less than 18 to 20 cubic feet for a bale of 400 pounds net, while British spinners, by the use of a specially devised yarn-baling press, reduce the size of the bale to 12 to 14 cubic feet. Where the element of shipping cost is as high as it is to South American ports,[1] the size to which the bale is compressed makes a considerable difference in the landed cost, aside from the convenience in handling. And particularly when it is to be transported to interior points is a well-packed, water-protected compressed bale an essential requirement and one which American mills, doing their export business through intermediaries have not usually recognized the importance of observing. The extension of long-time credit, which Latin-American countries require, but which American mills are not accustomed to extend in domestic trade, was another drawback to a considerable export business.

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[1] Statements of this tenor are common in the letters received from exporters: "Yarns put up for export usually the same way as for domestic. Skein yarns in bales containing 400 pounds, but no 10-pound paper bundles, as American spinners have so far not seen the necessity of conforming to export packing." "The mills objected to this paper packing and we had the yarn packed in 10-pound bundles but not wrapped in paper."

As a result of this situation, it is probably not surprising that prior to the war American yarns were only slightly known and that they were used in comparatively small quantities outside of the United States and Canada. In 1913 they constituted less than 2 per cent of the combined yarn imports into the principal countries of South America—now our largest and our natural export market. By 1918, American cotton yarns were being shipped to South America in a volume amounting to fully half of the normal import requirements of those countries, and in the important market of the Rio Plata region, American mills supplied in 1918 much the larger part of all the cotton yarn imported.

Prewar obstacles to export trade largely overcome.—The striking expansion of the American yarn exports, as exemplified by the changes in the South American trade, was, to be sure, the result of war conditions. The decided falling off in the shipments that could be had from the European spinners, and their very high prices, forced Canadian and Latin-American importers to turn to the United States for an increasing part of their needed supplies and thus practically created our export trade. The changes that have been brought about under the unusual conditions have served, however, to overcome in large part the prewar obstacles in the way of a considerable and permanent foreign outlet for American cotton yarns.

Familiarity and quality.—American yarns have not only become better known abroad during the war, particularly in Latin America, but on the lower counts they have also come to be regarded as appreciably better in quality than the European yarns, and on the finer counts, as equal to the superior yarns formerly supplied from Manchester, England. A large exporting house shipping to the Rio Plata region declares that "even if their prices were slightly higher, United States spinners would have the preference on account of quality."[1] The consensus of opinion seems to be that the newly acquired export markets can, by cultivation and attention to the accustomed preferences of buyers in those countries, afford permanent and growing outlets for the American cotton-spinning industry, and that markets once developed can, for the largest part, be held against competition even when normal trading with Europe is again possible.

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[1] *In February, 1919,* the freight rate on cotton yarn from New York to the nearest port in South America *(Puerto Colombia, 1,800 miles from* New York) was reported as 54½ cents per cubic foot.

Factors in price.—In the matter of price, American houses expect to hold the new markets on yarns up to 36s or 40s—which is about the limit of the yarn spun from American upland cotton—but they are doubtful as to the finer counts. It is hardly possible as yet to forecast the comparative costs of production that will prevail in the chief cotton manufacturing countries when conditions have stabilized. The relatively greater increase in foreign costs since 1914, however, due to the more rapid advance in wages and reduction of hours, and the heavier taxes which European manufacturers will have to bear for a considerable period after the war, are expected to place the United States in a more advantageous position to compete with European spinners in supplying foreign markets.

Important factors in price, in addition to basic costs of production, will be more economical methods of carrying on export trade, and low freight rates to South American ports. In both these respects the United States was at a disadvantage prior to the war in comparison with its European competitors.[2] The assignment by the United States Shipping Board of a considerable part of the new merchant marine to Latin-American trade and the recent association of large American textile houses into strong export combinations, made possible under the Webb-Pomerene law, are expected to place American houses on an equal footing with the Europeans in competing for foreign markets.

Growing adaptation of buyer as well as seller.—In the course of the extension of their trade abroad, American manufacturers have become familiar with the preferences and methods of trade in the new markets, and are reported to be showing a greater willingness to comply with the requirements of their foreign buyers—a most important factor in deciding the course of trade. In the mooted matter of packing, although exporting houses still report that spinners sometimes refuse to accept orders simply because export packing is required, the importance of this seeming detail is coming to be recognized by Americans.

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[1] American mills usually employ a better quality of raw cotton than do European mills for the same counts of yarn. This is attributed to two factors: The more general use abroad of mule spinning which allows of a shorter staple cotton than is practicable in frame spinning, the usual American method; and the fact that the higher wages paid to cotton-mill workers in the United States has led American manufacturers to economize on labor by using a grade of cotton that will run easier and with fewer breaks, and thus necessitate less attention on the part of the operative. For instance, in spinning sheeting yarns American mills use strict to good middling cotton, whereas English mills rarely use over middling.

[2] A difference in shipping cost of $5 to $10 per cubic ton is a considerable handicap, especially when quotations are for landed price in the foreign port, as is the case with much of the yarn trade.

On the other hand, it is reported that foreign buyers are coming to be less insistent upon the observance of the old-established requirements. Thus, several concerns report that during the past two or three years they have persuaded their foreign clients to accept coarse skein-yarns in 10-pound bundles, but without the individual paper wrapping formerly required.[1] Another difficulty encountered at first but no longer regarded as a serious drawback, was that the Argentine market preferred the soft knitting yarns, spun on mules, such as had been obtained from England before the war. Except for very fine counts or counts for special purposes, American yarns are practically all ring spun, and the exporters found few spinners in the United States equipped to make mule-spun knitting yarns in the counts desired. The Argentine knitters then changed to the use of ring-spun knitting yarns, which had proved entirely satisfactory to the knitting trade in the United States.

Difficulty is still reported regarding the size to which American bales are compressed and the higher freights thereby entailed. Complaint is also made of the poor condition in which American bales of yarn are received at destination, because of the failure in packing to use an inner layer of waterproof paper or cloth under the jute burlap. These are instances of lack of care in details which British manufacturers have long since learned to observe.

The outlook.—These and similar difficulties are but details, however, which increasing familiarity on the part of American spinners with the needs of their clients and a desire to retain them as buyers will doubtless remedy. They are not insurmountable and should afford no serious hindrances to the retention of the war-won markets for cotton yarn, which by reason of quality, price, and improved facilities for exportation, American spinners seem now in a position to supply in increasing volume.

The Latin-American markets can still absorb fully twice the volume of the 1918 shipments, even without taking into account the very likely further extension of yarn-consuming plants in those countries. There is every reason why the growing yarn import requirements of

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[1] One of the largest yarn shippers to Argentina, in urging the importance of proper bale packing, describes the experience of his concern as follows:

"When we first commenced exporting yarns, we were requested to quote skein yarns in 10-pound paper bundles, as customary in the European export trade. We told our clients that we considered this an unnecessary expense in the coarse numbers of crude yarns, and after a little persuasion on our part the customers agreed that skein yarns could be tied in 10-pound bundles without paper wrapping. This was a saving of about one-half cent per pound, because where the yarn is made up in 10-pound paper parcels each 10 pounds of the yarn has to be pressed in a little press before parceling, and of course this additional labor added to the cost of the yarn. The finer numbers of colored yarns which were sold in skeins, we believe, were mostly made up in 10-pound paper parcels before packing in bales. Of course cone yarns are always shipped in cases."

Canada should be supplied in increasing measure from the adjacent mills of the United States instead of from overseas. The neutral countries of Europe have, during the war, become buyers of American yarns, while the large markets of the Balkans and the Levant—hitherto little cultivated by American manufacturers—may now present better opportunities.[1] The neglected market of Hongkong, as has been pointed out above, can become an important outlet for American knitting yarns; and it is not unlikely that in other eastern markets the demand for better grade yarns—finer than those supplied by the native industries or from Japan—can be met, under the changed conditions, as well by American manufacturers as it has been in the past by the spinners of Lancashire.

IMPORTANCE OF YARN EXPORT TRADE FROM TARIFF VIEWPOINT.

The potential exporting ability of the American spinning industry, as evinced by the striking expansion of the yarn export trade since 1914, and the strong likelihood of its retention in peace times—now that a favorable opening has been created in foreign markets and the prewar obstacles largely overcome—is an important fact from a tariff viewpoint. It is significant both in its relation to our yarn imports, and as an indication of the character of the American yarns sold in foreign markets in competition with those of other countries.

CHANGE IN RELATIVE VOLUME OF EXPORTS AND IMPORTS.

The following table shows the relation of American exports of cotton yarn to annual imports, both in volume and value, for specified years since 1904. (Yarn exports were first recorded separately in 1904.)

TABLE 20.—*Relation of annual exports of cotton yarn to imports, in volume and value, specified years, 1904 to 1918.*

[Source: Based upon Annual Reports on Foreign Commerce and Navigation of the United States.]

Fiscal year.	Imports.			Exports.			Per cent of exports to imports.	
	Quantity (pounds).	Value.	Price per pound.	Quantity (pounds).	Value.	Price per pound.	In weight.	In value.
1904	5,135,376	$2,252,096	$0.438	[2] 689,000	$172,286	$0.25	[2] 13.4	7.7
1909	6,800,901	3,246,035	.477	[2] 2,204,000	551,062	.25	[2] 32.4	17.0
1914	6,853,235	4,092,072	.597	[2] 2,875,000	716,036	.25	[2] 42.0	17.5
1918	5,687,641	7,482,475	1.316	15,121,682	7,571,338	.50	265.9	101.2

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[1] It is reported that a large southern yarn mill has sent one of its officers abroad to make arrangements for the establishment, probably in Paris, of a European branch of the company to be followed by similar branches in other centers in Europe. This contemplated large-scale exportation of cotton yarn to Europe is a most significant indication of the new outlook of the American cotton industry, bred of the changed conditions brought about during the war.

[2] Estimated, see text.

It will be observed that prior to the war the annual exports of American-spun yarn were much less important than our annual imports of foreign yarns. While the imports were about stationary, however, the exports were increasing, and in the fiscal year ended June 30, 1914, amounted to 17.5 per cent in value and about 42 per cent in weight of the yarn imported during the same period.[1] The rapid growth of the yarn export trade during the war has been described. In 1918, when exports were first recorded by weight as well as by value, it was found that our exports had reached 15,121,682 pounds, or more than two and one-half times the volume of our imports, 5,687,641 pounds. In value, the imports and exports were about equal at $7,500,000 in 1918, with imports decreasing and exports increasing.[2]

It appears, therefore, that the United States is likely hereafter to figure more prominently as an exporter of cotton yarn than as an importer.

DIFFERENCE IN CHARACTER OF EXPORTS AND IMPORTS.

The yarns entering our export trade are of a decidedly different character from those being imported. In 1918 our exports averaged 50 cents a pound, while our imports averaged $1.32, indicating the much lower average count and quality of the yarns exported as compared with those imported. No official records are kept as to the count or description of our cotton yarn exports. A fairly reliable idea of their character was obtained, however, from the export licenses granted by the War Trade Board during the last half of 1918; the applications were required to show the count and condition of the yarn for which license to ship was requested. Supplemental data were obtained by an inquiry among the principal concerns to whom such licenses were granted as to the character of their yarn export trade during 1918, the results of which have been analyzed in some detail in this discussion of the principal markets.

A summary of all information available indicates that while yarns as fine as 40s, 50s, 60s, and even up to 80s, have been included in our export shipments, chiefly to Canada, Brazil, and in small amounts to Argentina, the great bulk of American yarns exported have been under 40s, and for the largest part under 30s. The average price per pound in 1918 indicates that our exports centered about 12s to 16s in weaving yarns, and 16s to 24s in knitting yarns, with small amounts of finer yarns for knitting and thread making. Yarns are exported mainly in the gray, only small quantities being bleached or dyed; they are usually carded, of strict to good middling American upland cotton, of not over $1\frac{1}{16}$-inch staple, though shipments of combed Peeler (including "mock Egyptian") cotton are reported also in fairly large amounts. Knitting yarns are more often single, being doubled only in the finer counts; weaving yarns, in coarse counts, are 2 and 3 ply as well as single. Very little mercerized or specially processed yarns are reported among our exports, except to Canada, where some fine mercerized and a small quantity of polished yarns, being admitted free of duty, were sold as in the domestic market.

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[1] Exports were recorded only by value prior to 1918, the weights given in the table for 1904, 1909, and 1914 being estimated from the value, assuming an approximate price in prewar years of 25 cents a pound for the average grade of yarns exported, say average 20s.

[2] Later figures received, as we go to press, show that imports in the fiscal year 1919 declined to 2,827,886 pounds valued at $5,099,964, whereas exports increased to 19,217,500 pounds valued at $13,887,287.

On the other hand, only a small proportion of the imports of foreign yarns are under 40s. As was evident from the detailed analysis of imports in the preceding chapters, coarse and medium yarns were imported only because they were specially dyed, polished, or spun and finished in a manner not readily obtainable here. The following table shows the make-up and trend of the imports into the United States in selected years during the past two decades, according to degree of fineness:

TABLE 21.—*Imports of cotton yarn into the United States, by range of yarn counts; comparison of fiscal years 1898, 1908, 1914, and 1918.*

[Source: Imports for consumption as published in Commerce and Navigation of the United States; supplemented by tabulation of original import invoices shown in Tables 11 and 11a.]

Yarn count.	1898		1908		1914		1918	
	Weight (pounds).	Per cent total.	Weight (pounds).	Per cent total.	Weight (pounds).	Per cent total.	Weight (pounds).	Per cent total.
Total, all counts	1,742,951	100.0	7,014,237	100.0	6,853,235	100.0	5,687.641	100.0
Coarse, 1s to 20s	153,285	8.8	706,721	10.1	[2] 705,415	10.3	70,421	1.2
Medium, 21s to 40s	409,248	23.5	1,907,714	27.2	928,584	13.6	235,862	4.2
Fine, 41s and above	1,180,418	67.7	4,399,802	62.7	[3] 5,219,236	76.1	5,381,358	94.6
41s to 60s	348,880	20.0	2,091,587	29.8	1,588,194	23.2	896,519	15.7
61s to 80s	496,405	28.5	1,648,738	23.5	1,747,731	25.5	2,015,787	35.4
81s to 100s	[1] 233,817	13.4	330,899	4.7	604,004	8.8	1,252,080	22.0
101s to 120s	58,571	3.4	188,045	2.7	[4] 612,294	8.9	[8] 651,800	11.4
121s to 140s	25,199	1.4	82,435	1.2	[5] 437,810	6.4	505,263	8.9
141s to 200s	17,451	1.0	57,560	0.8	[6] 205,848	3.0	58,368	1.0
201s and above	95	....	538	....	[7] 23,355	0.3	1,541	0.2

[1] Includes 32,041 pounds of which counts not specified.
[2] Includes 39,917 pounds, of which counts not specified.
[3] Includes 1,117,741 pounds, of which counts not specified, except that 1,074,887 pounds stated as above 99s.
[4] Includes 150,000 pounds, of which counts not specified.
[5] Includes 100,000 pounds, of which counts not specified.
[6] Includes 50,000 pounds, of which counts not specified.
[7] Includes 7,242 pounds, of which counts not specified.
[8] Includes 143,810 pounds, over 99s, of which counts not specified.

In making up the above table the distribution of counts not specified in Commerce and Navigation for 1914 and 1918 were based on details ascertained by special investigation, as shown in Tables 11 and 11a. There were 32,041 pounds in 1898, 307,242 pounds in 1914, and 143,811 pounds in 1918 which had to be distributed by presumption, based on relation of prices and knowledge of counts most in demand.

It will be observed that imports of coarse and medium yarns have made up a diminishing fraction of the total, whereas the proportion of fine yarns above 40s has been increasing, from about two-thirds of the total in 1898 to about 95 per cent of the total in 1918. A growing proportion of our imports has been of yarns finer than 80s; while some American mills spin as fine as 120s and above, 80s has been about the limit of quantity production. In other words, much the greater part of our imports has been above the upper limit of fineness of the bulk of our exports, and an increasing portion above the degree of fineness that is spun in this country in any considerable quantity.

Our incoming and outgoing yarns are mutually exclusive also in other respects than count or fineness. Although practically all yarns exported are of native American cotton, usually ring spun, most of the imports are mule spun in England of Egyptian cotton, the imports of yarns made of American cotton being relatively small. Similarly, while very small amounts of specially processed yarns were reported among our exports, about 60 per cent of the yarns imported are normally subjected to special finishes, and much of these are imported primarily because of the finish, particularly in the case of the gassed and prepared yarns for use in lace making, knitting, embroidering, and in combination with silk.

Moreover, while our exports go chiefly into the weaving of staple cotton cloths, as ducks, and into the knitting of ordinary hosiery and underwear, our imports are for the most part used for special purposes, principally the making of laces, lace curtains, and embroideries; for mixture with silk or wool, for the manufacture of sueded gloves, narrow fabrics of special kinds (as hatbands and shoe laces), for covering electrical wires, and for thread making. Such yarns as have been imported for weaving into cotton cloth have been for specialties, as voiles and crêpes; and those imported for knitting have been mainly of very fine counts and of superior quality, mostly of Egyptian cotton, for use in high-grade hosiery.

Yarns exported represent staple American products.—The character of the American yarns which are being sold in foreign markets, as compared with the foreign yarns imported into the United States, has an important bearing from a tariff viewpoint. It will be recalled that the yarns on which American exporters have developed considerable foreign markets, and which they expect to retain as permanent outlets, were for the largest part under 40s, single or ply; there were small quantities of finer counts, but not much above 60s; more often carded than combed; mostly in the unbleached state; very little was bleached, dyed, or further processed; and spun chiefly of upland or Peeler American cotton. Our exports represent substantially *the range of yarns which can be produced on the ring frame from ordinary American cotton—the staple products of the American spinning industry.*

About 95 per cent in weight of all raw cotton consumed in American mills is regularly of the domestic upland variety.[1] Of the thirty-four and one-half million active cotton spindles in the United States reported for 1918, 90 per cent were ring spindles and only 10 per cent mule spindles, with the proportion of ring spindles increasing.[2] Nearly half (45.6 per cent) of all cotton yarn produced in the United States was found by the last census to be under 20s, and fully 93 per cent under 40s [3]—the limit of fineness of the greater part of the exports of American yarn.

Advantages of American spinners on export grades.—On yarns of this character American spinners find their greatest advantage in competition with foreign producers, for the raw cotton used is native grown, the material constitutes the larger part of the total cost of the yarn, and the use of ring-spinning machinery economizes further on the cost of labor, particularly the type of skilled labor required for mule spindles. It will be observed, moreover, that the yarns exported were very near the crude state, as spun. It was found in the course of the Tariff Board investigations in 1911 that with each additional process of manufacture or handling, the increased cost of labor and expense in the United States is greater than in competing countries, making it most advantageous for the American manufacturer to export yarn near the crude state, without advancing in condition or process. The demand of our foreign markets is chiefly for yarn in the unprocessed gray or "crude" state.

Bearing of yarn exports upon tariff on imports.—The cotton yarns which have been exported for many years, and since the war in markedly increasing quantities, represent the surplus of the staple lines of domestic manufacture which American spinning mills produce in large quantities and have advantages for producing economically. Since American manufacturers are able in their sales abroad to compete with foreign producers, it may be assumed that on yarns of the same character they are able to meet foreign competition in their home market. The upper limit of fineness of the yarns exported in considerable quantities has been seen to be about 40s count. Up to that point, at least, it would appear that the duties on foreign yarns serve rather as a source of Federal revenue than as a protection to the domestic manufacturer of similar yarns, except as the yarn is subjected to certain processes found to be more expensive here than abroad, and for which a general differential or additional duty is provided.

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[1] Census Bulletin No. 137, "Cotton production and distribution, 1917-18," pp. 49-50.

[2] Census Bulletin No. 137, "Cotton production and distribution, 1917-18," pp. 48-49.

[3] Census of Manufactures, 1914. Report on "Cotton manufactures," Tables 24 and 25.

LEADING EXPORTERS OF COTTON YARN.

The following is a list of firms prominent in the exportation of cotton yarn, as shown by the licenses granted by the War Trade Board during July–December, 1918:

American Trading Co., New York.
G. Amsinck & Co. (Inc.), New York.
Bech Van Siclen & Co. (Inc.), New York.
M. D. Becerra Co. (Inc.), New York.
Catlin & Co., New York.
Rafael del Castillo & Co., New York.
The Distributing Corporation, New York.
Donnell & Palmer, New York.
Duncan Fox & Co. (Inc.), New York.
Dutilh-Smith, McMillan & Co., New York.
Los Fabricantes Unidos (Inc.), New York.
W. R. Grace & Co., New York.
Hagemeyer Trading Co., New York.
O. S. Hawes & Bro., Fall River, Mass.
Hughes & Co., New York.
Wm. H. Knox & Co. (Inc.), New York.
Peech Sons & Phillips Co., Camden, N. J.
Wm. E. Peck & Co. (Inc.), New York.
W. H. Robinson & Co., Philadelphia, Pa.
Louis Robison & Bro. (Inc.), New York.
The Smythfield Export Co., Philadelphia, Pa.
Suffern Co. (Inc.), New York.
Turner Halsey Co., New York.
Transocean Mercantile Co. (Inc.), Boston, Mass.
William Whitman & Co. (Inc.), Boston, Mass.
Young & Wile (Ltd.), New York.

THE ADJUSTMENT OF TARIFF DUTIES ON COTTON YARN AND THREAD

CHAPTER VI.

THE ADJUSTMENT OF TARIFF DUTIES ON COTTON YARN AND THREAD.

INTRODUCTION.

Paragraphs 250 and 251 of the tariff act of 1918 provide for cotton yarn and thread of every description.

Paragraph 250 renders cotton yarns, intended for use in further manufacture, subject to progressive rates of duty, based on the number or count of the yarn. The duties increase by eight steps from the coarsest, those not over No. 9, up to the finest, those above No. 99. Yarns advanced in manufacture by combing, bleaching, dyeing, coloring, or mercerizing, pay a 2½ per cent noncumulative additional.

Paragraph 251 gives a rate of 15 per cent flat, irrespective of count, method of manufacture, color, or finish, to sewing thread and to crochet, darning, and embroidery cottons. The articles thus included average higher in value, count for count, than the yarns imported under the progressive rates of paragraph 250. The cotton sewing thread is necessarily more costly, because more advanced in manufacture, than the yarns of which it is composed. The yarns for handwork are made of higher priced material and in general are more advanced in manufacture than most yarns of the same counts imported under paragraph 250. The main handwork yarns are those for hand embroidery and these come in counts and plies from 10s in 3 and 4 ply up to 60s in 3 and 4 ply, both plain and mercerized. These yarns were, before the war, imported in large quantities from an Alsatian company and were mostly made of the highest grade of Egyptian cotton, combed, gassed, and mercerized.

Paragraph 251 levies a higher rate of duty on counts up to and including No. 39 than does paragraph 250. From 40s on, paragraph 251 is preferential in that it puts a lower rate of duty on the finished sewing threads than it does on the yarns of which they are made, and a lower rate of duty on the special class of yarns for handwork, most of which are made of the best material and subjected to extra labor in manufacture, than it does on other yarns, the majority of which do not cost so much to manufacture.

The differential treatment thus accorded the more advanced and higher priced portion of the spun products of the cotton industry, in the ranges beyond 39s, seems to be due to two reasons. The first is that a large portion of the domestic industry in sewing thread and in special yarns for handwork is controlled by a single English company, and in order to prevent the possibility of any undue increase in prices of sewing thread to the garment manufacturer and the seamstress or any undue increase in prices on crochet, darning, and embroidery cottons to the users, it was not considered advisable to protect the domestic manufacturer of such special articles in the higher ranges. In other words, paragraph 251 was apparently designed to secure competitive prices on sewing thread and handwork yarns above 39s. The second reason, which is not referred to particularly in tariff hearings but which was probably taken into consideration, is that sewing thread and yarns for handwork are usually numbered, lettered, or otherwise designated in an arbitrary manner and not according to the uniform numbering system used for cotton yarns intended for further use in manufacture. Furthermore, these yarns for handwork come in short lengths and in endless variety so that testing for counts would be somewhat more difficult than in the case of yarns for machine work. This administrative difficulty has been avoided by levying a flat rate on such special yarns in short lengths and on sewing thread

But for the arbitrary system of numbering or designating sewing thread and yarns for handwork it would appear more just, according to the general intent expressed in the tariff act, to have one paragraph embrace all cotton yarns and threads and to levy progressive rates of duty, based on the yarn count, uniformly on all cotton spun products, with such differentials as might be desirable in order to insure that those more advanced in manufacture should be subjected to the higher rates.

ILLUSTRATIONS.

PLATE NO. 1.

Plate No. 1 shows a bale and a case of cotton yarn being opened up after arrival. The bale, as shown on the right, is the more usual method of shipment. A certain number of skeins are bundled together, each bundle wrapped in paper, a number of these bundles put in the baling press, covered with waterproof paper and then with burlap, and the bale strapped with iron bands. On the left is shown the wooden case that is used for yarns that have to be handled with more care; in this particular instance the yarn is put up in cones and each cone paper-wrapped before being put in the case.

PLATE NO. 2.

Plate No. 2 illustrates some of the forms in which cotton yarn is put up for shipment and entered under paragraph 250 of the act of 1913.

No. 1. A skein of yarn reeled on a swift of 54 inches circumference. This is the most typical form of put up. The majority of international trade in cotton yarn consists of skeins bundled and baled. This particular skein is 78/2 ply, mulespun

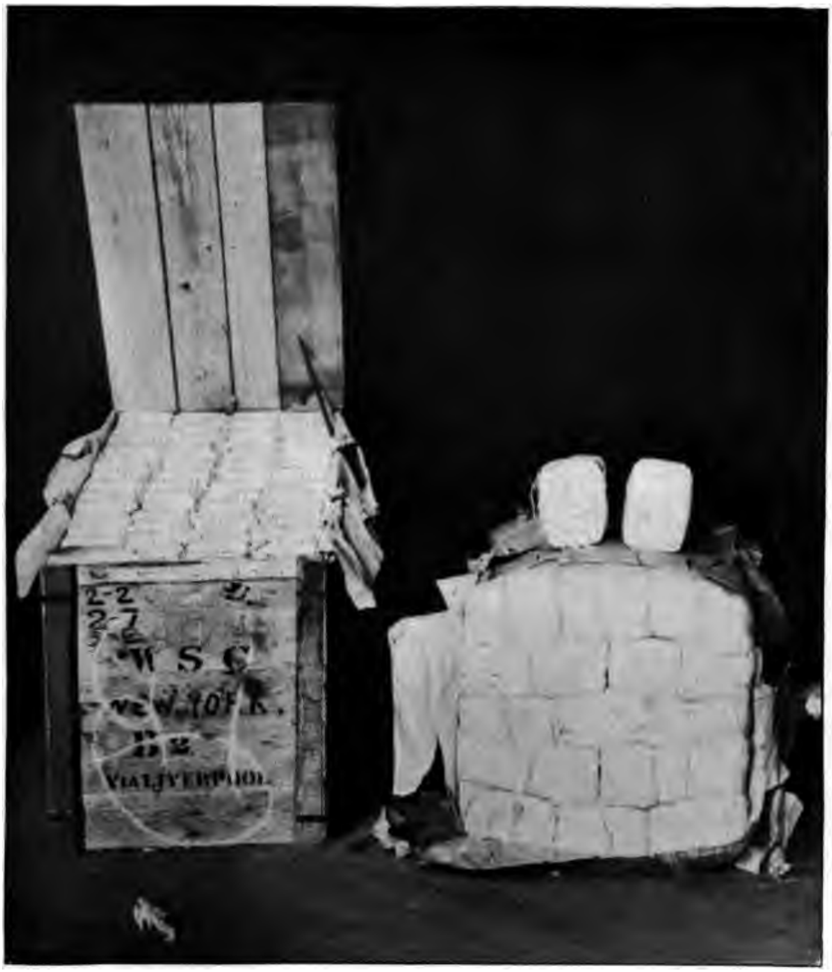


PLATE NO. 1.

COTTON YARN IN CASE AND IN BALE.

PAR. 251. Spool thread of cotton, crochet, darning, and embroidery cottons, on spools, reels, or balls, or in skeins, cones, or tubes, or in any other form * * *.

The first paragraph relates solely to cotton yarn, whereas the second relates to cotton sewing thread and to special yarns put up for retail sale. The wording of these two paragraphs could be simplified and clarified to advantage. The following phraseology is suggested:

PAR. 250. Cotton yarn, including warps, in any form * * *.

PAR. 251. Cotton sewing thread; crochet, darning, embroidery, and knitting cottons, put up for handwork; all the foregoing in lengths not exceeding 840 yards * * *.

The suggested phraseology is less involved, clearer and more definite than that now in use.

The phraseology of paragraph 250 "Cotton thread and carded yarn, warps, or warp yarn" dates back to the tariff act of 1870 and this archaic wording has been retained ever since, apparently through apprehension that any change in the wording might make a change in the class of articles included thereunder. In most tariffs "cotton yarn" is considered inclusive and exclusive, though in view of the fact that the courts might possibly construe cotton yarn in the form of warps—a number of ends gathered together, sized or not sized, on beams or in ball or other form—as further advanced than cotton yarn, it might be well to add, as shown, "including warps." The addition of "warp yarn" seems meaningless; there is no more reason to specify warp yarn than there is to specify filling yarn, hosiery yarn, or many other kinds; all these are necessarily and indisputably included under the term "cotton yarn."

The term "cotton thread" is misleading as heading a paragraph dealing with cotton yarn, particularly as "thread" in common parlance means sewing thread. It is true that authorities are not in accord as to the exact shade of difference between the terms "yarn" and "thread" or as to the two being synonymous, but as sewing thread is included in a separate paragraph there is no need for putting the word "thread" into a cotton-yarn paragraph, and it is very unfortunately placed when it is used to start it. In statistical tables where subjects are referred to under abbreviated headings, it often occurs that American imports of cotton yarn are found listed as imports of cotton thread, to the mystification of the reader. The term "cotton yarn" includes ply yarns as well as single yarns and occasional references to certain classes of yarn as thread, for instance, references to lace threads, lisle threads, voile threads, could not in any way remove them from the classification of yarn or necessitate the addition of the word "thread."

The qualifying phrase "whether on beams or in bundles, skeins, cops, or in any other form" is hardly necessary; incidentally it may be noted that bundle yarn is the same as skein yarn. If any qualifying phrase is considered necessary, there might be added the shorter inclusive phrase of "in any form," though the words "cotton yarn, including warps" necessarily include all yarns, unless more specifically referred to elsewhere and no reference to the manner in which put up is really necessary. Since the most specific designation governs there is likewise no need of the clause "except spool thread of cotton, crochet, darning, and embroidery cottons, hereafter provided for," and it can well be omitted.

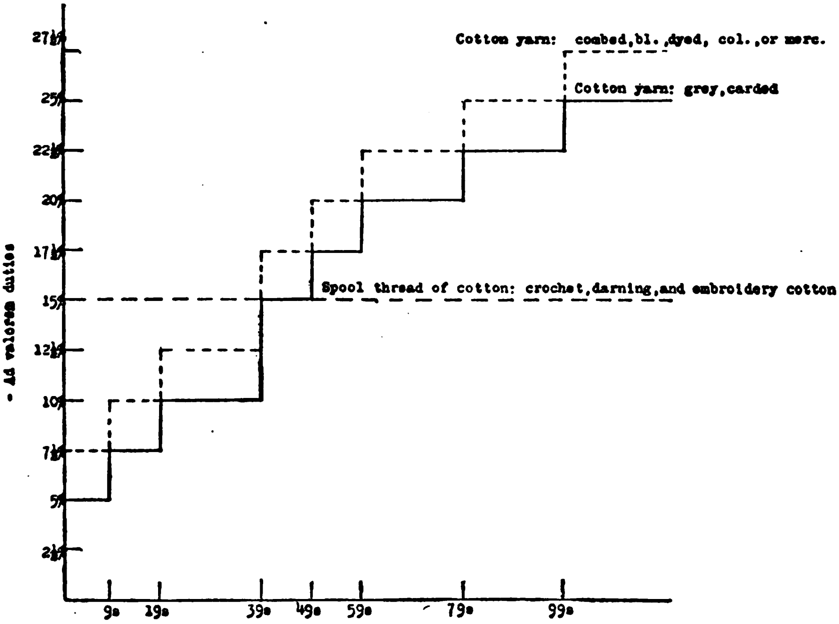
In paragraph 251 of the tariff act of 1913, the definition "spool thread of cotton" is archaic. It dates back to the tariff act of 1861, at which time practically all imports were on spools, whereas to-day sewing thread is largely put up on tubes, cones, and large bobbins for the clothing manufacturer, and the trade in sewing thread on spools for domestic use is a smaller proportion of the total. To speak of "spool thread of cotton" and to extend the definition to include sewing thread not on spools and never intended to be put on spools is rather anomalous. Letters from domestic thread makers, from spinners, and from importers are unanimous that "cotton sewing thread" is the term that should be used to-day. The use of this term has the further advantage that it is not necessary to mention therewith how it is put up, as sewing thread is sewing thread whether on spools or in skeins or in any other form.

It may be noted that the earliest specific mention of the merchandise now included under paragraphs 250 and 251 was in the tariff of 1816, where they were lumped together as "Cotton twist, yarn, or thread." In the United Kingdom the yarns used in making cloth are sometimes referred to as "warp and weft" and sometimes as "twist and yarn." The warp is the harder twisted, so the British trade usually quotes warp yarn under the heading of "twist," whereas the softer twisted weft is often referred to in contradistinction simply as "yarn," meaning yarn other than the hard twisted warp. "Thread" in the tariff of 1816 meant ply yarn of any character, including sewing thread, as distinguished from twist and yarn which were ordinarily in the single. It was not until the Civil War that legislators came to realize that the term "twist" was a Lancashire provincialism and not used in the United States; in 1870 the term "warp yarn" was substituted as the equivalent of the old term "twist," and apparently it has not yet been realized that the term "yarn" as used to-day includes all kinds of yarn and that it is tautological to specify warp yarn after yarn. In the same way the term "thread" has been retained in its old connection as denoting ply yarns, whereas the term "yarn" is to-day fully inclusive of ply yarns as well as of single yarns.

In the tariff of 1897 there was a new departure through the inclusion of "crochet, darning, and embroidery cottons" with cotton sewing thread, and this provision has since been retained. To bring this up to date it should really read "Crochet, darning, embroidery, and knitting cottons put up for hand work." This provision was intended to cover cotton yarns of a special type, mostly soft spun, imported for handwork and known in the trade as cottons instead of cotton yarn, this term having special reference to the soft cottony character of the yarns. These yarns are put up in small skeins, packets, balls, etc., and usually sold under fancy names and marks rather than by the counts of the cotton yarn of which they are composed. A very large proportion of the imports are in small amounts of any one type, so that it would involve extra work to attempt to identify the counts of each for the purpose of levying the same tariff duties by counts as on ordinary cotton yarns. It is largely for this reason that the tariff act of 1913 continued these soft spun yarns for handwork under a flat rate, together with sewing thread. Sewing thread itself is numbered arbitrarily and as the same thread number may be made from different counts of yarn the thread number is not, as in the case of ordinary ply yarns, an index to the "true" yarn counts of which it is composed. In other words, paragraph 251 includes sewing thread and special yarns of which the true yarn counts are not customarily specified.

When the yarns for handwork were listed separately under the tariff act of 1897 as "crochet, darning, and embroidery cottons" there was evidently no intention of including any yarns other than those for handwork. The use of the term "cottons" is ample evidence of this, this term being applied only to special yarns, usually soft spun and in short lengths, intended for handwork. The special provision for these yarns for handwork was continued under the acts of 1909 and 1913. Under the acts of 1897 and 1909 court decisions interpreted this provision as applying solely to yarns for handwork, in fact under the act of 1909 a length limitation inserted in the tariff made other interpretation impossible. Under the act of 1913, with the length limitation omitted, the Court of Customs Appeals in 7 Ct. Cust. Appls. 414 extended the term "embroidery cottons" to include all embroidery yarns, irrespective of whether intended for hand or machine work. One hypothesis on which this decision was based was that the comparatively high duties imposed upon embroideries and the comparatively low duties imposed upon embroidery cottons by the tariff act of 1913 indicated a congressional purpose to encourage the embroidery manufacturing industry of this country, whether by hand or machinery. Normally about half of the imports of manufactures of cotton consist of laces, embroideries, and braids, and low duties on the special yarns that are required from abroad for the manufacture of such articles would tend to stimulate such domestic manufacture and reduce the amounts of such fully manufactured goods required from abroad. If this interpretation of the intent of Congress be correct it is clear that the embroidery industry was specially favored by having machine embroidery yarn admitted at a special low rate, but, though lace and fancy braids were made dutiable in the same paragraph with embroidery, such preferential treatment was not extended in the case of the special yarns that the lace and braid industries require from abroad.

CHART E.



COMPARISON OF PROGRESSIVE RATES OF DUTY ON COTTON YARNS (PAR. 250), WITH THE FLAT RATE OF DUTY ON SPOOL THREAD OF COTTON AND CROCHET, DARNING, AND EMBROIDERY COTTONS (PAR. 251), UNDER ACT OF 1913.

Yarns for use on the schiffli embroidery machine differ in no essential particular from yarns required for other machine work, such as weaving or knitting or braiding, and Congress apparently intended that they should be subjected to the same progressive rates of duty as apply to ordinary yarns under paragraph 250, without regard to ultimate use on any particular type of machine. On the other hand, knitting cottons are identical with crochet or embroidery cottons and here the use determines. Soft spun yarns are frequently imported with a label bearing all three terms; for instance, a ball of yarn may be seen with a band around it reading "Clark's O.N.T.

Pearl Cotton, for CROCHETING, EMBROIDERING, and KNITTING." In such cases it is considered that crocheting or embroidering is the main use and there is levied a duty of 15 per cent flat under paragraph 251. If the identical yarn comes in labeled "knitting cotton" duty is then levied at the progressive rates stated under paragraph 250. As an illustration the following is an actual case: A firm imported some 8/3 soft white yarn for crocheting infants' sacques and paid 15 per cent duty under paragraph 251. A little later it imported the identical yarn, but on the customs officers attempting to collect 15 per cent duty the firm stated that this lot was for knitting infants' sacques; it therefore claimed and the customs officers had to admit its claim that the yarn was dutiable under paragraph 250 at only 7½ per cent.

It is clear that the wording of paragraph 251 allows a distinction to be made where there is none—that is, between embroidery and knitting yarns intended for handwork—and yet fails to draw clearly the distinction between embroidery yarns for handwork and embroidery yarns for machine work. However, if knitting cottons are, as they logically should be, included under paragraph 251 and the courts made the same ruling in regard to them as they have in regard to embroidery cottons—construing the term to include yarns for machine as well as for handwork—paragraph 250 would become still more restricted.

If the intent of Congress in paragraph 251 is to provide special rates of duty on yarns for hand crocheting, darning, embroidering, and knitting, put up in form for retail trade, and to exclude yarns for machine work, it is imperative that limitations as to length be provided, length being the only definite division which would indicate the congressional intent. It is not economically feasible for machine workers to use lengths as short as are preferred by hand workers.

In the act of 1909 sewing thread and handwork yarns not on spools, reels, or balls were limited to those containing in each skein, cone, or tube less than 600 yards. The original recommendation to the Senate Finance Committee was 840 yards, which is the length of one hank. Customs officers state that 840 yards more nearly represents the extreme lengths sold for the retail trade. They state that the maximum lengths of the various cottons imported for retail trade are:

Crochet cotton, 820 yards per ball.
Embroidery cotton, 1,377 yards to skein of 50 grams.
Darning cotton, 442 yards per ball.
Spool thread of cotton, usually 500 yards per spool, but in some instances 1,000 yards per spool.

They further state:

These maximum lengths are in some instances extreme lengths. If, however, *limitation of length* is adopted, it would be well to include all of the cottons usually

> sold by the retail trade, and in such case the normal maximum length should become the adopted limitation. The cited maximum length of embroidery cotton, namely 1,377 yards, which is in 50 gram skeins, is believed to be an extreme length which could be conveniently put up in shorter lengths to bring it within the provided tariff limitations.

If the length limitation of 840 yards (one hank) was adopted then all yarns in lengths of more than 840 yards would fall under the provisions for yarns for machine work. In conjunction with the clause "put up for handwork" this length limitation would insure that yarns for machine embroidery, as for other machine work, would be subjected to the regular rates for machine yarns. If this length limitation also applied to sewing thread then sewing thread in lengths over 840 yards would become dutiable as manufactures of cotton not otherwise provided for, but this contingency would probably occur but rarely if at all. If the tariff provisions make any distinction between yarn and sewing thread a length limitation is particularly important in order to prevent yarns for making sewing thread being entered as sewing thread, or vice versa.

At the present time it is often difficult to decide whether an importation should be treated as ply yarn under the progressive rates of paragraph 250 or as sewing thread under the flat rate of paragraph 251. As one thread maker states: "Yarn when advanced beyond the condition of the single strand can always be used for sewing purposes." Sewing thread, which the tariff still refers to by the old term of "spool thread of cotton," is partly 4 or 6 ply cabled for use on spools for domestic work but is also used, especially by garment makers, in 3-ply and even in 2-ply. Sewing thread is usually but not always polished, and either bleached or dyed. In the absence of a length limitation the use determines and frequently the customs officers have to base their decision largely on the direction of the twist, assuming that reverse-twisted ply yarn must be for sewing purposes. For instance during the war a firm imported some cotton yarn for weaving airplane fabrics. This yarn was 78/3 reverse twist and the customs officers returned it as dutiable at 15 per cent though as yarn it would have paid 20 per cent. They report: -

> The 78s, 3 ply, mentioned was, by reason of its reverse twist, believed to be sewing thread, and inasmuch as the chief use of yarns of this character at the time of the passage of the act of 1913 was for sewing purposes, classification was made under paragraph 251 as cotton sewing thread. The newly created use for 3-ply reverse twist yarn for aeroplane cloth did not affect the classification, the chief use in 1913 being controlling.

The use of reverse twist as a means of distinguishing sewing thread gives a very poor basis. As one of the largest thread makers writes us: "It is well to note that cotton sewing thread is made in both regular and reverse twist in all plies." On the other hand, considerable amounts of lace yarns are imported with reverse twist and it is also used to some extent in yarns for other purposes. The fact that the majority of sewing threads is made with reverse twist is therefore hardly an argument for listing all reverse twists as sewing thread and all regular twists as yarn. In deciding whether an importation should be listed as yarn or as sewing thread the Customs must necessarily take into consideration the use, where this is known, but a length limitation would be of much assistance.

To show the difficulty of identifying many imports, which may or may not be invoiced as "sewings," unless a length limitation be adopted for sewing thread, the following statement by the appraiser of the port of New York, in answer to a query from the Tariff Commission, is of importance:

> Question. In our study of invoices coming in during the years 1914 and 1918, we found imports of sewings in 2 and 3 ply entered under paragraph 250 as cotton yarn. Cotton sewing thread is also sold in 2 and 3 ply. "Sewings" is an English term that is used for sewing thread as well as for yarn for making sewing thread. If a yarn enters as, say "3/70 sewings", how do you determine whether it shall pay 15 per cent duty under paragraph 251, or 20 per cent duty under paragraph 250?
>
> Answer. Prior to the rendering of Treasury Decision 37793 (Oct. 18, 1918), cotton yarns in the gray, 2 or 3 ply, in skeins, were not returned for duty under the provisions of paragraph 251. The term "spool thread of cotton" is interpreted by the Board of General Appraisers to include all cotton thread commercially known as such, notwithstanding that it is not on spools, and in the gray, and not bleached, colored, or otherwise finished. It therefore becomes difficult and at times impossible to establish, from an inspection of gray thead or yarn, its dutiable status. The manipulation of finishing was the mark of identification to establish the yarn as sewing thread. The reverse twist is an indication that the yarn may be chiefly used for sewing. It is, however, not conclusive. The physical appearance not definitely establishing the chief use of the yarn, the appraiser must frequently resort to trade practice, and from the preponderance of opinion establish a tariff classification. If the limitation of length were incorporated with the provisions for sewing thread, it would be practicable to differentiate between sewings (spool thread of cotton) dutiable under paragraph 251, and yarn dutiable under paragraph 250.

Incidentally it may be noted that in compiling and publishing import statistics the Treasury and the Commerce Departments follow the wording of the tariff act and unless the wording of the act makes clear demarcations imports will not be recorded as clearly as may be desired. For instance, in "Commerce and Navigation," imports for consumption under paragraph 251 are recorded as follows, taking the 1918 figures as an example:

Spool thread of cotton, crochet, darning, and embroidery cottons:

	Quantity.	Value.
On spools, reels, or balls (100 yards)...............	33, 490, 771	$212, 045. 85
In skeins, cones, tubes, or in any other form (100 yards)..	598, 113	89, 716. 95

Such a statistical classification means nothing as two diverse articles are intermixed according to the way in which put up. It would be of value to have records of the total imports of cotton sewing thread, and it might possibly be of interest to show the amounts on spools and the amounts otherwise put up. It would also be of value to have records of the imports of the yarns that are granted special treatment, that is, those listed as crochet, darning, and embroidery cottons (including, under revised wording, knitting cottons), but it is immaterial as to whether these are in balls, skeins, reels, or other form used in retail sale.

ADJUSTMENT OF YARN DUTIES BASED ON DIFFERENCE IN COST OF PRODUCTION.[1]

England is the only country that has in the past exported any considerable quantity of cotton yarn to this country; it is also the only country that exhibits any present likelihood of substantial competition in the American yarn market in the future.[2] Therefore, if the difference in costs of production here and abroad should be adopted by Congress as a basis for a tariff on cotton yarn, the English are the only foreign yarn costs that need be studied for contrast.

The finer the yarn, other things being equal, the higher the conversion cost, whether measured in cents per pound or in percentage of the mill cost. By mill cost is meant the total cost at the mill, including material (with allowance for waste), labor, and expenses, whereas the latter two, that is, labor and expenses, are known as the conversion cost. On coarse yarn counts the material constitutes so large a proportion of the total cost at the mill that a relatively small ad valorem duty is sufficient to prevent exports from a low-wage to a high-wage country. The advantage of the low-wage country, in competing in the market of a high-wage country, increases with any increase in the percentage of labor in the total cost and is therefore greatest on the finest counts that it has the skill to produce. A low-wage country, like Japan or India, producing coarse counts, can not compete in the American market with domestic mills; a moderately low-wage country like England finds competition, so far as prices are concerned, possible only on the finer counts. English conversion costs have been very little, if any, lower than the American on coarse counts, whereas on very fine counts above 100s the English costs have been considerably lower than the American. The competitive area is normally on the medium fine counts from 40s to 100s.

The most practicable method of arriving at an equitable and uniform adjustment of the tariff, if it were to be based on the difference in cost of production, would be to ascertain first, as nearly as possible, the amount of wages and expenses that it takes to operate the average spindle for a given period in each country, i. e., the average cost of operation. The conversion cost per pound of any count can then be found by dividing the output per spindle on that count into the operating cost per spindle. The mule, which predominates in the United Kingdom, is not as productive as the ring frame which predominates in the United States; also the rate at which the output per spindle decreases with the increasing fineness of the yarn spun is not the same for the ring as for the mule. Using a different operating cost per spindle for each country, the curves for the progressive conversion costs per pound will, as the yarns advance from coarse to fine, show more and more divergence.

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[1] This study is submitted to show the general principle underlying the adjustment of a tariff based on the difference in costs of production here and abroad. It is not intended as an exact measure of the correct tariff height but as an approximation thereto based on stated hypotheses.

[2] *See discussion of possible* sources of American imports in Appendix, Part I.

In 1911 the United States Tariff Board selected for detailed contrast, from a large number of American cotton mills and a smaller number of Lancashire mills for which cost data were obtained, the mills found to be producing at lowest costs. The operating costs of the American ring-spinning mill was found to be $2.113467 per spindle per year of 2,935 hours. This compared with operating costs for the English mule-spinning mill of $1.238544 per spindle per year of 2,775 hours. The operating cost per spindle per year in England was, under the conditions stated, 60 per cent of the American. The English mills were all working a uniform full-time week of 55½ hours and, as customary, they figured on a year consisting of 50 working weeks, making 2,775 hours to the year. The full-time hours of operation of the American mills in 1911 varied from 54 hours a week in Massachusetts to 60 hours a week in the Carolinas, and a fair average for the entire cotton industry of the United States was 57 hours a week, or 2,850 hours a year. Taking into consideration the higher findings on the other mills for which costs were then ascertained, it would seem that a fair comparison is afforded for 1911 by considering the average operating cost per spindle per year to have been $1.50 per 2,775 hours in the English cotton industry and $2.50 per 2,850 hours in the American cotton industry.

It is to be noted that the English spinning mills customarily ship the mule cops to the weaving mill, usually a separate concern, directly from the spindle in open skips (wicker baskets), and therefore incur no costs beyond the actual spinning. This condition obtains in all the English mills for which the Tariff Board obtained costs, and to secure a correct comparison the Board very properly deducted all costs in the American mill incurred for spooling, reeling, or other processes after spinning.

Wages, hours, and other factors affecting costs are at the present time in a state of uncertainty both in England and in the United States, and it is not yet possible to figure costs on a stable basis. Cost findings by the Federal Trade Commission from a large number of domestic cotton mills in 1918 revealed an abnormal variation in costs between various mills on the same goods and showed that the difficulty of obtaining representative average costs was much greater than usual. Even the 1918 costs can now be used only as an indication, as there have since occurred radical changes in hours and wages. Operating costs per spindle per year are increased by reason of any increases in wages and expenses, but are reduced by any decrease in the hours operated. Costs from individual mills at this time can be used only as indications, and in working out an approximation to the correct height of a yarn tariff on the difference in costs of production theory the best method is to use as a basis the Tariff Board data, obtained in a normal period, and make such adjustments as necessary to correspond with subsequent general changes in level of wages and expenses in the two countries.

In regard to the English wage increases it may be noted that the spinners and other operatives in Lancashire spinning mills work under the terms of collective wage agreements which are made for fixed periods, and that increases or decreases in rates of wages are based on standard lists.[1] In the period just before the World War the operatives were being paid the standard list prices plus 5 per cent. During the war there were various small advances in rates. There was a larger advance in rates in December, 1918, that made the ruling rates at the end of 1918, 115 per cent on list. After a strike and extended conferences between the employers' and workers' executives, there was granted on July 10, 1919, a reduction in hours from 55½ to 48, together with an increase of 30 per cent on the standard piece price lists, with equivalent increases for time workers. Work was resumed on July 14, 1919, under an agreement that working hours were to remain unchanged for 18 months, and the new rates of pay to hold until April 20, 1920. Wages are therefore temporarily stabilized at 145 per cent on list. Since rates of wages before the war were 105 per cent on list, the present rates are $\frac{245-105}{105}$ or 133 per cent above prewar rates. In regard to expenses (salaries, taxes, insurance, depreciation, repairs, supplies, power, and miscellaneous) the rate of increase can as yet only be estimated, but indications are that they have fully equaled the advance in labor costs.

In the case of the American spinning mills the rate of increases in wages and expenses, starting from a higher level, has apparently not equaled the rate of increase in the English mills. There are different hours worked in different States and there is no uniform wage scale. The advances at Fall River and New Bedford, where there are basic wage scales, afford some indication. The increases at these places, compounded, including the 15 per cent advance of June 2, 1919, have totaled 107.7 per cent on prewar lists. This percentage relates to the increase in piecework rates, and as Massachusetts reduced its hours by one-ninth, from 54 to 48, on June 2, 1919, the actual amounts received by the workers and therefore the wage expenditures per spindle per year are one-ninth less than the advance in rate of wages and amount to only 95.7 per cent above prewar figures. This percentage of increase is probably above the average for the entire American cotton-spinning industry. Indications are that expenses have increased somewhat more rapidly than the wages. In 1911 hours per week in the main cotton-manufacturing States ranged from 60 in the Carolinas down to 54 for Massachusetts, whereas in 1919 the Carolinas ran 55 hours, and Massachusetts (since June 2, 1919) 54 hours. A fair average for the entire industry would seem to be 57 hours a week or 2,850 working hours in 1911, and 52 hours a week or 2,600 hours a year in 1919.

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[1] For these standard basic lists see Report on Collective Agreements between Employers and Work*people in the United Kingdom*, Board of Trade (Labour Department), London, 1910.

On the basis of the above it would seem that the advance in rates of wages and expenses in 1919 above 1911 was possibly 110 or 115 per cent in the United States, assuming expenses to have advanced more rapidly than wages, and 133 per cent in the United Kingdom, assuming expenses to have kept pace with wages. The operating costs per spindle have not advanced in the above proportion as the shorter the period operated the less, relatively, it costs to run a spindle, and hours have decreased in both countries. The exact percentage of increase in operating costs per spindle is as yet impossible of ascertainment, and in the following illustration we have assumed that the operating costs per spindle have doubled in both England and the United States. Using a round figure—that is, an increase of 100 per cent—we not only avoid attempting a greater accuracy than is attainable, but also approximate fairly closely to the rates of increase already noted. For instance, an operating cost per English mule spindle per year of $3 per 2,400 hours in 1919, as against $1.50 per 2,775 hours in 1911, represents an increase in rate of wages and expenses of $\frac{3.00}{1.50}\times\frac{2,775}{2,400}$, or 131.2 per cent. An operating cost per American ring spindle per year of $5 per 2,600 hours in 1919, as against $2.50 per 2,850 hours in 1911, represents an increase in rate of wages and expenses of $\frac{5.00}{2.50}\times\frac{2,850}{2,600}$, or 119.2 per cent. The assumption that the operating costs per spindle per year have doubled in each country, in spite of the decrease in hours per year, therefore affords a fair basis for illustrating the method to be used in obtaining average conversion costs and in drawing a yarn tariff curve based on the difference in costs of production.

Table 22 has been worked out in accordance with the foregoing. *The figures for* the conversion costs per pound have in each instance *been obtained* by dividing the operating cost stated for a year of a certain number of hours by the standard production per spindle on that count for the hours stated. The figures for the American output per ring spindle were compiled by a leading American maker of textile machinery, whereas the figures for the English output per mule spindle are based on current practice as stated by English authorities. The table has been worked out to include the range from 10s to 130s, the latter representing the extreme limit attained in ring spinning.

It is to be remembered that the figures for operating costs per spindle and conversion costs per pound represent costs up to and including spinning only.

TABLE 22.—*British mule-spun filling and American ring-spun filling.*

[Comparison of conversion costs per pound of different counts under stated conditions as to hours, outputs, and operating costs per spindle per year.]

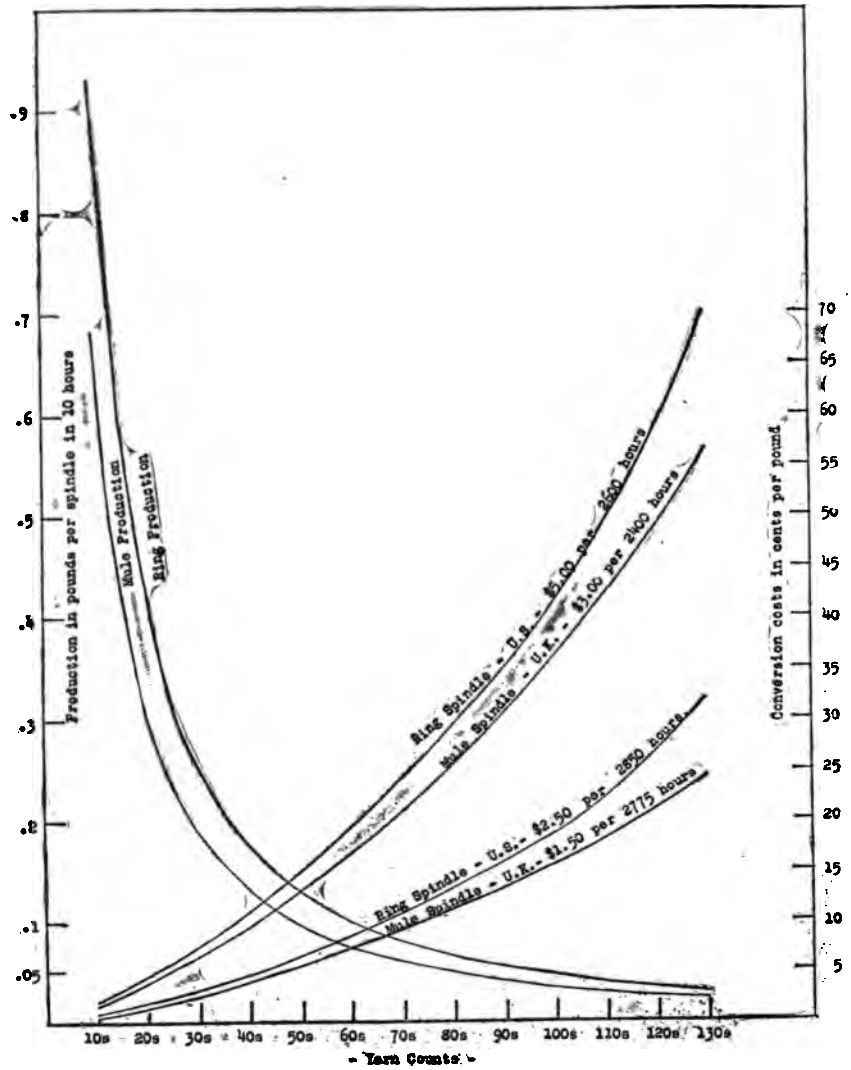
Yarn counts.	British mule-spun filling.					American ring-spun filling.				
	Production per spindle in a—			Conversion costs per pound with annual operating costs per spindle of—		Production per spindle in a—			Conversion costs per pound with annual operating costs per spindle of—	
	Day of 10 hours.	Year of 2,775 hours.	Year of 2,400 hours.	$1.50 per 2,775 hours.	$3 per 2,400 hours.	Day of 10 hours.	Year of 2,850 hours.	Year of 2,600 hours.	$2.50 per 2,850 hours.	$5 per 2,600 hours.
	Pounds.	*Pounds.*	*Pounds.*	*Cents.*	*Cents.*	*Pounds.*	*Pounds.*	*Pounds.*	*Cents.*	*Cents.*
10	0.6846	190.00	164.32	0.79	1.83	0.9283	264.57	241.36	0.94	2.07
20	.3033	85.00	73.51	1.76	4.08	.4176	119.02	108.58	2.10	4.60
30	.1892	52.50	45.40	2.86	6.61	.2591	73.84	67.37	3.34	7.42
40	.1293	35.87	31.03	4.18	9.67	.1775	50.59	46.15	4.94	10.83
50	.0951	26.40	22.83	5.68	13.14	.1283	36.58	33.37	6.84	14.98
60	.0742	20.58	17.80	7.28	16.85	.1000	28.50	26.00	8.77	19.23
70	.0592	16.43	14.21	9.13	21.11	.0794	22.63	20.64	11.05	24.22
80	.0491	13.62	11.78	11.01	25.47	.0658	18.75	17.11	13.33	29.22
90	.0404	11.22	9.70	13.37	30.92	.0544	15.50	14.14	16.13	35.36
100	.0344	9.55	8.26	15.70	36.32	.0464	13.22	12.06	18.91	41.46
110	.0296	8.23	7.11	18.23	42.17	.0392	11.17	10.19	22.38	49.07
120	.0255	7.08	6.12	21.18	49.00	.0324	9.23	8.42	27.09	59.38
130	.0222	6.15	5.32	24.37	56.39	.0274	7.81	7.12	32.01	70.22

Difference in conversion costs per pound on above basis (in cents).

Yarn counts.	Conversion costs in 1911.			Conversion costs in 1919.		
	American ring yarn.	British mule yarn.	Difference.	American ring yarn.	British mule yarn.	Difference.
10	0.94	0.79	0.15	2.07	1.83	0.24
20	2.10	1.76	.34	4.60	4.08	.52
30	3.34	2.86	.48	7.42	6.61	.81
40	4.94	4.18	.76	10.83	9.67	1.16
50	6.84	5.68	1.16	14.98	13.14	1.84
60	8.77	7.28	1.49	19.23	16.85	2.37
70	11.05	9.13	1.82	24.22	21.11	3.11
80	13.33	11.01	2.32	29.22	25.47	3.75
90	16.13	13.37	2.74	35.36	30.92	4.44
100	18.91	15.70	3.21	41.46	36.32	5.14
110	22.28	18.23	4.05	49.07	42.17	6.90
120	27.09	21.18	5.91	59.38	49.00	10.38
130	32.01	23.47	7.64	70.22	56.39	13.83

Chart F illustrates graphically the differences in output and in conversion costs per pound of various counts in the United States and in England as set forth in Table 22. The curves at the left contrast the relative output per English mule spindle and American ring spindle for the same period of time, a day of 10 hours. The curves *at the right* illustrate the conversion costs for counts from 10s to *130s under the* probable average operating costs per spindle, English

CHART F.

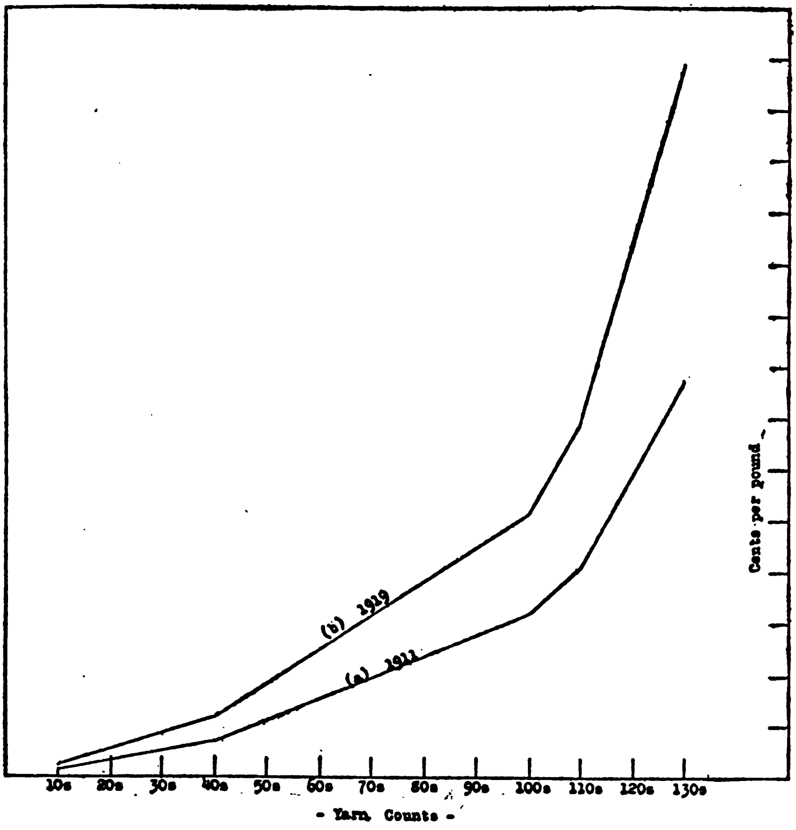


YARN CONVERSION COSTS PER POUND OF AMERICAN RING-SPUN AND BRITISH MULE-SPUN FILLING YARNS, BASED ON STATED OPERATING COSTS PER SPINDLE PER YEAR AND ON STANDARD OUTPUTS PER SPINDLE.

mule and American ring, in 1911 and 1919. One fact brought out by the chart is that a higher level of operating costs means a steeper curve, that is, a more rapid increase in conversion costs from one count to another or from one range of counts to another.

To bring out the difference between the English and American conversion costs per pound of single gray yarn as spun in 1911, and the probable difference in 1919, chart G has been platted on a larger scale than chart F on which it is based. If the foregoing hypotheses be accepted as correct then the curves of chart G represent the basis for yarn tariff duties in 1919 as compared with a similar basis in 1911. It is seen that up to 40s, which incidentally may be noted as marking the limit of the use of ordinary Upland cotton in this country, the *difference between* the English and the American costs is small.

CHART G.



DIFFERENCE IN CONVERSION COSTS PER POUND OF AMERICAN RING-SPUN AND BRITISH MULE-SPUN FILLING YARNS, UNDER FOLLOWING OPERATING COSTS PER SPINDLE PER YEAR:

(a) 1911: American, $2.50 per 2,850 hours and British $1.50 per 2,775 hours.
(b) 1919: American $5.00 per 2,600 hours and British $3.00 per 2,400 hours.

There does not appear from these to be any object in changing the rate of advance of duties at 15s, 20s, 24s, or 30s, as has occurred in tariffs in earlier years before the American industry had attained its full growth, and the same rate of progression can well be used from the coarsest up to 40s. From 40s on the rate of progression of cost differences increases more rapidly and above 100s the cost differences increase still more rapidly.

The logical conclusion to be derived from the figures and charts here shown is that an American yarn tariff, if designed to equalize costs of production here and abroad on single gray yarns as spun, would consist of a scale of duties providing for one rate of progression up to 40s, a second and steeper rate of progression from 41s to 100s, and a third and still steeper rate of progression of duties on yarns above 100s. In specific terms the 1919 curve of differences in costs of production, as shown on chart G, represents approximately one-thirtieth of a cent per number per pound on counts up to 40s; one-twentieth of a cent per number per pound on counts from 41s to 100s, and one-tenth of a cent per number per pound on counts above 100s.

Further adjustments for processes beyond spinning.—In regard to the practical application of the foregoing it should be noted that the contrast has been made on yarn "as spun" as that affords the only basis for a direct contrast without having to allow for differences in English and American costs for the various processes which may or may not be used beyond spinning. Only a comparatively small amount of yarn is, however, imported as spun, in gray cops; the larger portion of the imports are in gray skeins, having undergone at least reeling after spinning, and some have been wound into cones or tubes or otherwise put up. Such processes normally cost less in England than in the United States, but it is difficult to say what adjustment should be made for such differences because some processes of putting up cost more than others and the average for imported yarns would depend on the relative amounts put up in the different styles. Without attempting to set any figure for such addition it may be observed that even if 50 per cent be added to the previous differences, which were for a duty curve based on probable "as spun" costs in 1919, the new duty curve would, on gray single yarn as imported, approximate one-twentieth of a cent per number per pound on counts up to 40s, and one-fifteenth of a cent per number per pound on counts from 41s to 100s. This latter range might be made to cover from 41s to 120s. This 50 per cent would undoubtedly be much more than sufficient to include a liberal profit as well as the difference in costs between England and the United States for the processes beyond spinning, such as reeling, winding or other methods of putting up. Operations such as doubling or processing are not here considered and these are separately discussed later in relation to the desirability of differential or additional duties on yarns advanced beyond the basic classification.

Counts above 120s.—It should be noted that the production in this country of yarns above 120s is very small and that imports of such counts, especially if processed by "preparing" or otherwise, are practically noncompetitive. In at least four countries, viz., Canada, Austria, Switzerland, and Belgium, the tariff provides for the free admission of yarns beyond a certain fineness which marks the limit of any real competition from domestic mills. The object in view in such countries in waiving the small revenue to be derived from duties on such fine noncompetitive yarns is of course to stimulate the lace or other domestic industry which uses such fine yarns and the advisability of such a provision in the American tariff is a matter for the consideration of Congress. If such a provision were adopted with such an object it would logically apply to counts beyond 120s. The demand is not large enough to cause much extension of the domestic manufacture of counts beyond that point, though on the fine range from 60s to 120s the American industry is developing steadily in the South as well as in the North.

Conclusion.—The foregoing study, though it attempts to indicate only approximately the height of tariff duties based on the difference in costs of production, yet seems to indicate clearly that, if duties are to be levied for other than revenue purposes and are to be adapted in general to competitive conditions, there should be one rate of progression of duties, whether by individual counts or by groups of yarn counts, on the range up to and including 40s; another and somewhat steeper rate of progression of duties on counts from 41s to 100s or 120s; and that above 120s the duties should be stationary or discontinued.

DISCUSSION OF DIFFERENTIALS.

DIFFERENTIAL FOR COMBING.

The differential on combed, as compared with carded, yarn first appeared in the tariff act of 1894; it has been continued in the tariff acts of 1897, 1909, and 1913.

The United States is unique in levying this differential, for it has apparently never appeared in any foreign tariff law. Cotton yarn may be carded, may be double carded, may be combed, may be double combed, and whether a yarn has been subjected to two processes of careful carding or has been subjected to one process of ordinary combing after one process of carding is a matter that can not be proved by any physical test. In regard to this a leading British authority on fine spinning writes:

> I have consulted the spinning experts of my company on the subject of the best means of distinguishing between carded and combed yarns, and they agree with the opinion I gave you, that no mechanical test is possible and that the only method by which a decision can be arrived at is the appearance of the yarn; the combed being more even and regular in count, freer from neps and dirt, and having usually a much brighter and more polished appearance than yarn that has been carded only, and although in some cases a well-carded and a poor-combed yarn may come near together in these respects, still in the great majority of cases, with samples to guide you, I do not think you will have great difficulty in checking your imports.
>
> The matter is also greatly simplified, at any rate in all but one of the trades with which I am acquainted, because when they are analyzed there are many counts where a combed yarn is never used and there are other counts where a combed yarn is always used, leaving only a few counts you will find it necessary to watch closely.

Whether a yarn has been combed or carded is likewise not ascertainable from the price. For instance, the following quotations on 58/2 yarn are taken from a British list sent an American importer, (in May, 1917) and are typical:

	58/2 carded Egyptian.	58/2 combed Egyptian.	58/2 combed Peeler.
	Pence.	*Pence.*	*Pence.*
Gray lisle yarn, in hanks, cones, or tubes	44¾	51	42½
Gray hosiery yarn, mercerized, in hanks	48	54	45¼
Gray hosiery yarns, mercerized, on cones	....	62¼	52½
Gray curtain yarn, in hanks	51¾	....	....

This shows that difference in material or in twist or in method of putting up often offsets the factor of combing so that a carded yarn may sell at a higher price than a combed yarn, even though intended to be used for the same work. For instance, the 58/2 carded Egyptian lisle yarn above was offered at 44¾d. a pound as against only 42½d. for a 58/2 combed Peeler lisle yarn, made by the same company; also the 58/2 curtain yarn, carded only, was bringing slightly more than the 58/2 lisle yarn, combed, although both were made of Egyptian cotton.

The addition of the process of combing in the manufacture of any particular yarn necessarily increases the total cost, more by reason of the waste made than by reason of the labor and overhead of the machine processes necessary. The addition of an extra process of carding, instead of the combing process, will make the cost of the double-carded yarn intermediate between ordinary carded and ordinary combed yarns.

The cost of combing does not necessarily vary according to the count, because it depends primarily on the percentage of waste made, and the machine can be adjusted to remove a smaller or larger amount as desired. Sometimes the very lowest count yarns, if intended for hand-embroidery or hand-knitting work of high quality, may involve a higher combing cost than fine counts used for ordinary weaving or electrical winding. It would therefore appear that under a specific tariff any differential for combing should be at a fixed amount per pound, irrespective of the count. Under an ad valorem tariff, any difference in cost of manufacture between carded and combed yarn would be automatically taken care of by the regular ad valorem rate and an additional percentage for combed over carded yarn is in the nature of a double differential.

If the differentials are not made cumulative a differential on combing when there is also a differential on bleaching, dyeing, or coloring affects only gray yarns and if ply yarn is also provided with a differential then that on combing would affect only single gray yarns and the proportion of these imported is usually small.

Asked as to any difficulty of administration of the differential on combed yarns the customs authorities at New York, the entry port for the majority of cotton yarns, reported:

> It is not possible to distinguish between carded and combed yarns so definitely that the technical experts of this office would be willing to testify to their conclusions under oath. Where the correctness of the invoice statement of carded or combed is questioned by the experts of this office, an investigation is conducted abroad by Treasury Department officers to establish the method of manufacture of the particular yarn in question. This provision of law is very unsatisfactory, and at the tariff hearings preceding the passage of the present act the appraiser directed attention to the probability of unsatisfactory administration, and suggested the elimination of the duty-dividing line between carded and combed.

DIFFERENTIAL ON PLY YARNS.

Two or more yarns twisted together are known as twisted yarns or ply yarns. In England they are more often referred to as doubled yarns or folded yarns.

The manufacture of ply yarns involves two machine processes more than the manufacture of single yarns. In the case of coarse and medium counts these are spooling and then twisting; in the case of finer yarns they are doubling-winding and then twisting. Doubling-winding or folding, as it is sometimes called, consists of winding two ends together on a tube or cone instead of winding each end separately on to a spool as in the case of spooling; it costs slightly more but avoids the danger of "singles" (ply yarns containing one or more strands less than the required number) being made on the twister. When ply yarns are twisted together they are referred to as hawser-twisted or cable-twisted, but still fall under the more general heading of twisted or ply yarns. Ply yarns made by one twisting are often spoken of by the English as "one throw"[1] to distinguish them from the "double throw" or cabled yarns.

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[1] The word "throw," as here used, is derived from the Saxon "thrawan," to twist. A similar use is to be seen in the "thrown silk" of the silk industry.

The cost of producing ply yarns from single yarn is, in the case of fine yarns at least, greater than that of spinning the yarn from the roving, that is, the labor and overhead and waste involved in the two machine processes of doubling-winding and twisting is greater than that involved in the one machine process of mule spinning. The bulk of the cotton yarns imported are ply yarns and are sold by the doubler instead of by the spinner, these firms in England being usually separate and distinct.

As the manufacture of ply yarns involves two machine processes additional to the manufacture of single yarns, if cost differences are the adopted test it would seem that ply or twisted yarns should be made dutiable at a higher rate than single yarns. A differential duty is therefore logical on ply yarns or "yarns advanced beyond the condition of singles by twisting two or more yarns together." The first term "ply yarns" is inclusive of all yarns twisted together, whether the yarns so twisted together be singles or ply yarns and therefore includes cabled yarn. If the longer definition of "yarns advanced beyond the condition of singles by twisting two or more yarns together" be adopted, it is suggested that "grouping" be not added to "twisting" as in former tariffs. (Vide remarks on "Grouped Yarns" infra.)

The production from a spooler (or doubling-winder if that be substituted), and from a twister (whether ring twister, mule twiner, or flyer twister), in pounds per day, varies according to the speed and the fineness of the count. With an increasing number of ends twisted together the weight per yard and the production in pounds per spindle is increased so that 3-ply costs less per pound than 2-ply and 4-ply costs less than 3-ply. This applies only where the single yarn is the same and the method of twisting the same. If the 3-ply happens to be made by winding three ends together and then twisting, the cost will be higher than where the spun yarn is spooled separately and two ends then twisted together on the twister.

If the duties on the single yarns are levied at a progressive rate, based on the yarn count, then the differential duties on the twisted yarns should also be progressive at a slightly higher ratio of increase.

DIFFERENTIAL ON GROUPED YARNS.

If two or more ends are wound or spooled together so that they lie parallel the product is sometimes referred to as "grouped" yarns. In the case of fine yarns for twisting it is considered preferable to thus group together the ends to be twisted, using a doubling winder, rather than to spool each separately and then twist together the ends from the spools, as in the former case there is less danger of breakage on the twisting machine. Yarns are also grouped together for other purposes, but apparently the only grouped yarns imported, as shown by a detailed study of the invoices of 1914 and 1918, are those to be used for covering electrical wires. Electrical yarns are imported on cones having from 6 to 30 ends wound on side by side. This grouped yarn is then used as a unit in the braiding machine when covering the wires.

There is no apparent object in imposing a differential on grouped yarns. When single yarns are grouped together they still remain single yarns, and if desired can be easily separated and rewound as single yarns. In fact, although group winding is used as preliminary to other manufacture, it is not a manufacturing process, such as spinning or twisting, which can not be reversed; it is in the same category as reeling or ordinary winding of single ends, more in the nature of a putting-up process than actual manufacture. There is no differential on yarn wound singly on cones or tubes, and this being so a differential duty is not to be expected on two or more ends wound together on cones or tubes or otherwise, particularly as the cost per pound of multiple winding is not more but usually less than the cost of single-thread winding.

Grouping is not referred to in the tariff act of 1913, but is mentioned here to clarify the situation in case it is suggested for inclusion in future as in two past tariffs.

DIFFERENTIAL ON CABLED YARN.

Cabled yarns are further advanced in manufacture than ordinary "one-throw" or single-twisted ply yarns by reason of the fact that they are made by twisting together twisted yarns. In some tariffs a special differential has been levied on cabled yarns as distinguished from ordinary ply yarns. Such an additional duty might be looked for in the case of cotton sewing thread such as the 4-cord or 6-cord, if it was desired to put these on an even basis with cotton yarn, but since sewing thread is treated separately from yarn there is not much object in having a special tax on cabled yarns as distinguished from other ply yarns. The only yarns that might come in under this heading would be harness twine and fishing-net twine. The latter is ordinarily too coarse to secure admittance even under a very low tariff, and examination in detail of the invoices of 1914 and 1918 shows that the only imports of cabled yarn consist of harness twine for making loom harness. This import does not amount to a tenth of the domestic production of cotton harness twine and is mainly of special counts or qualities needed by the silk mills, the main counts imported being 130/9 and 140/9. These fine-count harness twines are not produced in this country, and efforts have been made by silk interests to have them put on the free list. If not specially mentioned, cabled yarns enter as ply yarns. While on the theory of adjusting rates to advances in manufacture, cabled yarns would be dutiable at an advanced rate over other ply yarns, practically there appears to be no advantage, from the point of view of duties either for protection or revenue, to be derived from a differential on this article.

DIFFERENTIALS FOR COLOR.

The tariff act of 1894 was the first to levy a differential according to color, and the advanced classification then adopted of "colored, bleached, dyed," has been retained in subsequent tariffs, though now shown as "bleached, dyed, colored," which is a more logical arrangement. This leaves only unbleached, usually called "gray," yarn for the basic classification. The term "colored" is used in addition to the term "dyed" so as to include yarns made of two or more rovings, or of two or more yarns, of which one may be undyed; also to include printed yarns. Where a gray and a dyed roving are spun together on the spinning frame to make single yarn the result is called "mock-twist" in this country, where it is largely used as filling in weaving denims; in England it is called "grandrelle" and mainly used in shirtings. Mock-twist yarns are colored yarns, though they might possibly not be classed as dyed yarns because only half of the material is dyed.

The cost of ordinary bleaching or dyeing is a minor factor in the cost of the finished yarn. It also appears that the cost of bleaching and dyeing is little, if any, higher in this country than abroad, in fact that ordinarily it is less here. This is borne out not only by statements of importers but also by an examination of the imports, which show very little yarn imported other than in the gray. The dyed yarns that are imported are mainly either Turkey-red yarns for towels and woven labels, or blue-black yarns for hatbands. Importers state that these are dyed before import solely because the local dyehouses do not obtain the shade and fastness of color required. Polished yarns are also imported to some extent in the dyed state, but here also it is not a question of competitive price as to dyeing but the fact that the dyeing has to precede the polishing. No testimony has been received to show that either bleaching or dyeing is higher in this country than abroad. If a differential is levied on bleaching, dyeing, or coloring it would seem to be justified only for the revenue obtainable. As the cost of bleaching or of dyeing is not dependent on the yarn count, but only on the nature of the process and the extent to which carried, a differential, if levied on this operation, would appear to call for a fixed amount per pound, irrespective of the count. Under an ad valorem tariff *the increase in cost* due to bleaching, dyeing, or coloring would be automatically taken care of by the regular ad valorem rate, and an additional percentage for bleaching, dyeing, or coloring is in the nature of a double differential.

DIFFERENTIALS FOR FINISH.

The finishes to which yarns are subjected before importation are, aside from bleaching, dyeing, or coloring, four in number. These are, in order of relative importance in the import trade: Gassing, mercerizing, preparing, polishing. The only one taken cognizance of in the tariff law is that of mercerizing.

Mercerizing.—The differential for mercerization was first inserted in the tariff act of 1909—"one-fortieth of one cent per number per pound"—and this was levied in addition to the other rates of duty. Yarns that were combed, bleached, dyed, colored, grouped, or twisted, paid a higher rate of duty because of such advancement, and if mercerized, paid a still higher rate.

The tariff act of 1913 continued the provision for a differential on mercerization, making it 2½ per cent ad valorem. However, under the last act it runs concurrently so that the differential for mercerization takes effect only on gray yarn and does not affect the duty on yarn that is combed, bleached, dyed, or colored, as these latter would be subject to the 2½ per cent differential whether mercerized or plain.

The cost of mercerization does not vary in proportion to the count; in fact, the charge for mercerization is usually the same for all counts under 80s, and only slightly increased for finer counts because of the extra care with which they have to be handled. On this basis if any differential is levied on mercerized yarn it should be either one flat rate or else one flat rate on yarns up to 80s and a slightly higher rate on finer yarns. Under an ad valorem rate of duty any increase in value due to mercerization would be taken care of by the regular duty.

Mercerization charges here and abroad have been shown in Chapter IV. So far as the testimony of importers and of American mercerizers go, yarns can be mercerized as cheaply in this country as abroad. Probably this was also true in 1909, when the insertion of a mercerization differential was first secured; certainly it was true in 1913. In the tariff hearings of that year one witness spoke of the differential on mercerization as "one of the jokes of the last tariff" and gave figures to show that mercerization costs were at least as cheap here as abroad. No differential is needed to protect the mercerization industry in this country and if any differential is levied on mercerized yarn it will have only revenue significance.

Gassing.—Over a third of the American imports of cotton yarn have been subjected to gassing. Normally cotton yarn loses about

5 per cent of its weight and thus becomes 5 per cent finer in count through gassing. The higher price obtainable for the finer gassed yarn than for the original coarser plain yarn is usually fully sufficient to offset the cost of gassing. Because of this the English usually make no charge, or only a nominal charge, for gassed over plain yarns of the same selling count. Considering the labor and expense involved in gassing, it appears from such data as is available that the actual cost of gassing is higher in this country than abroad. If a differential is to be applied on any finishing process gassing is entitled to consideration. In planning any differential for gassing it should be remembered that, as shown in Chapter IV, the cost of gassing increases with the yarn count.

An extra duty on gassing would bear hardest on the Levers lace industry, as it is the largest consumer and can not obtain in this country the fine gassed prepared yarns it requires.

Preparing.—A portion of the yarns used in the manufacture of fancy laces and of lace curtains is first flattened by being passed between the rolls of a yarn-preparing machine. A small amount of such prepared yarns is also used in the manufacture of woven labels. About 22 per cent of the yarns imported in 1914 and about 32 per cent of those imported in 1918 were subjected to preparing. There is no yarn preparing in this country. Whether a differential, the effect of which would be to increase the cost to the users of prepared yarns, would aid in inaugurating this method of yarn finishing here is uncertain. It is the unanimous testimony of lace and lace-curtain manufacturers that, in spite of various attempts, domestic spinners have never succeeded in producing prepared yarn suitable to their needs.

Polishing.—There are large amounts of yarn and thread polished in the United States. These are mostly ply yarn and imports are of another character, high-polished single yarns for special work for which the demand is limited. Testimony indicates that the labor cost of making this highly-polished single yarn is proportionately so great that it would hardly be attempted in this country, especially in view of the limited demand, even were the tariff rates made prohibitive. During the war imports of this specialty were greatly curtailed, but domestic mills did not undertake its manufacture. Under such circumstances it is hardly probable that a differential on polishing would be of any benefit to American industry.

DIFFERENTIALS ON THE MANNER IN WHICH YARN IS PUT UP FOR SALE.

In but few countries has it been considered advisable for tariff purposes to take into consideration the manner in which yarns are *put up for sale,* except in so far as this shows whether the yarn is intended for retail use or for further manufacture by machines. In American tariffs the method of putting up has usually been regarded as nonessential. As stated elsewhere there was a differential on grouped yarns in 1894, 1897 and 1909, but this was apparently because the wording of "advanced beyond the condition of singles by grouping or twisting" was carried over from previous tariffs where it had been employed as a general description only, and was not originally phrased with any reference to differentials. In the last tariff "grouping" does not appear.

A casual reading of paragraphs 250 and 251 of the tariff act of 1913 might appear to show that there was a differential as to sewing thread put on spools; but this is not the case, as the duty applies uniformly to all sewing thread, whether on spools, in skeins, or in other forms. It is true that the method of putting up certain special yarns determines the paragraph under which they are to be assessed, but that is because it serves to differentiate between yarns for handwork, which are given special treatment, and yarns intended for use on machines. A soft spun yarn in ordinary skeins or on cones would pay duty as yarn under paragraph 250, but if put up in small skeins or in packets or in small balls it would enter as "cottons" under paragraph 251. If it is decided to continue preferential rates on the finer yarns for hand embroidery the method of putting up, together with the individual lengths, represent the best division, and the same treatment should apply to yarns for hand knitting. As to ordinary yarns the method of putting up might well be regarded as nonessential so far as differentials are concerned.

CUMULATIVE OR NONCUMULATIVE DIFFERENTIALS.

The system of basic and advanced classification on cotton yarns, in other words the assessment of additional or differential duties on yarns advanced in manufacture, has been used in American tariff acts only since 1894. The differentials levied in the last four tariff acts have been noncumulative with the sole exception that the mercerization differential in the act of 1909 was made cumulative, being applied "in addition to the foregoing specific rates of duty."

In most foreign tariff acts such differentials as are levied on cotton yarns are usually made cumulative. Some tariffs state separately the duties that apply on gray single, on bleached single, on dyed single, on gray ply, on bleached ply, on dyed ply yarns, etc.; others state the basic duties that apply to single gray yarns and various advanced yarns are listed as "dutiable as single unbleached plus" certain differentials.

If any particular advancement in manufacture is adjudged to require an additional duty either for revenue or for protection, it seems logical that it should be given full effect and not be discarded or rendered of no effect because another differential also applies. To have only one differential apply when the yarn has been subjected to two or more advances in manufacture, implies that separate differentials are not fully justified. Instead of having the rates on the basic classification higher than can be justified and then adding one differential to cover one or more than one advancement in manufacture, the logical course is to adjust carefully the rates on the basic classification, preferably gray single yarn, and to give full effect to each and every differential where there are differences in conversion costs, or other relevant circumstances, in advanced processes here and abroad. If it costs more to comb, to double, and to gas yarns here than abroad, and it is decided to protect each of these processes by an additional duty, then a yarn that is combed and doubled and gassed should be subjected to all three additional duties and not to one only.

If differentials are made cumulative, then the differential for each advancement should be carefully adjusted to fit the facts and no differential should be levied unless required. For instance, differentials are perhaps inadvisable, for reasons stated elsewhere, on mercerization, on preparing, on polishing, on cabling, or on grouping or other method of putting up. Differentials on bleaching, dyeing, and coloring, if levied, and if Congress adopts difference in cost as a measure of the amount of duty, should be based on specific proof that they cost more in this country than abroad. A differential on combing is peculiarly difficult of enforcement. A differential on gassing, though this process probably is more costly here, would prove burdensome to the lace and some other industries. The same is true of a differential on ply yarns. If an additional duty for any process is, after investigation, decided upon, then if the standards mentioned are approved, it should apply irrespective of and in addition to other differentials.

THE YARN COUNT AS THE STANDARD OF MEASUREMENT.

The tariff of 1894 was the first, in this country, to take cognizance of the fact that the cost of production increases with the increasing fineness of the yarn and that therefore the yarn count should naturally be the basic factor in adjusting any tariff on cotton yarn. Before that time the American tariffs on cotton yarn had been based mainly on the value, which is not as accurate a basis because the height of the tariff depended largely on the cost of the raw material used, the raw material forming in most instances a larger proportion of the total cost than did the conversion costs. Some other countries have based their yarn tariffs on the count for scores of years. France used this system more than a hundred years ago.

The production of a spinning frame or of a mule decreases with the fineness of the yarn spun, and as the output per spindle decreases, the cost of production per pound increases. In spinning mills it is customary to divide the operating costs, made up of the wages and general expenses, by the number of spindles to get an operating cost per spindle and then to divide this figure by the production per spindle on any count to get the conversion cost on that count. For instance on ring frames there is usually obtained about twice as many pounds of 30s as of 50s, owing to the difference in speed necessary and the difference in weight per yard, therefore the conversion cost of 50s carded yarn is usually double the conversion cost of 30s carded yarn. If the 50s is combed before spinning, or processed after spinning, its final cost is further increased, but for yarns made under the same system and subjected to the same processes the comparative costs of making may be primarily based on the count as this governs the output per spindle, and differentials used to adjust any further differences in cost due to additional processes. It is almost universally agreed that the yarn count is not only the easiest but the most logical basis for the adjustment of tariff duties on cotton yarn.

LIMITATIONS TO ACCURACY IN SPINNING AND DETERMINING YARN COUNTS.

The yarn count indicates the number of 840 yard hanks that weigh one pound, thus No. 10s measures 8,400 yards to the pound and No. 100s measures 84,000 yards to the pound.

In a cotton spinning mill the raw cotton from the bale is first made into a lap, usually 40 or 45 inches wide and weighing a certain amount per yard; this is drawn down to a loosely compressed but untwisted rope called a sliver; this is put through a series of machines and drawn finer and twisted into roving; this roving is put on the spinning machine and after being drawn finer is twisted into yarn. No matter how carefully adjusted is each process of drafting and of twisting it is impossible to spin exactly to the count desired. This difficulty increases with any increase in the number of yards that are to weigh one pound, that is, with the increasing fineness of the yarn. It is affected also by the amount of waste made, by atmospheric conditions, and by other circumstances.

Prof. William Myers of the Municipal School of Technology, Manchester, England, is a recognized authority on cotton manufacturing. In a paper before the National Association of Cotton Manufacturers, April 16, 1918, he had this to say on "Testing of yarns:"

> The graphic diagrams show the variation in count from two cops of reputed 46 mule twist. The tests in each diagram include the whole of the cops (30 tests), and it will be *seen that whilst* the average count is not much below the reputed, the variation

is considerable, extending in cop 1 from 43.6 to 48.4 (mean 45.46), and in cop 2 from 43.86 to 47.39 (mean 45.16). * * *

There does not appear to be any recognized basis of allowance for variation above or below the reputed count of yarn as between the spinner and the manufacturer (i. e., the weaver), the spinner being anxious not to deliver yarn which is appreciably finer and the manufacturer being unwilling to pass yarn which is appreciably coarser than the reputed count. * * *

Dr. Herzfeld in his work on the Technical Testing of Yarns and Fabrics, gives the following tables of variations above and below reputed counts, but it does not appear that either these allowances or any other are in general use, although some manufacturers insist on having their yarn delivered on the fine side of the reputed count.

Table of allowances.

Cotton yarn:	Per cent.
11s to 20s	2.0
21s to 40s	2.5
Above 40s	3.0

The testimony of Prof. Myers is borne out by other authorities, including practical spinners.[1] If a sufficient number of samples are taken it is possible to determine fairly accurately the actual average count of any yarn shipment but it is impossible for the spinner, no matter how conscientious, to produce precisely the count ordered. On coarse counts it is possible to spin within a fraction of one count of that ordered but on fine counts such as 200s a variation of as much as five counts would not be regarded as valid ground for rejection by the purchaser.

The appraiser at New York, asked for his opinion, states:

> It is not deemed advisable to have a provision inserted to permit of allowance of tolerance within normal trade variations from that invoiced. It is the experience of this office that foreign trade must of necessity seek the lowest rate applicable to their merchandise, in order to be able to compete with similar foreign merchandise in the markets of the United States. Therefore, a provision for allowance in any degree for variations in count would result in many shippers indicating upon their invoices not the commercial count but rather the count less the allowed variation. Administration would probably take into account commercial practice. Therefore, there need not be legal adoption of an accepted commercial practice.

BASIC AND ADVANCED CLASSIFICATIONS.

The American tariff acts of 1894, 1897, 1909, and 1913 have used the system of dividing imports of cotton yarn into a basic class admitted at the lowest range of duties and an advanced class subjected to a higher range of duties, and of then adjusting the duties under each classification on the basis of the yarn counts.

Table 7, given in Chapter II to show the quantities and values of cotton yarn admitted in the basic and the advanced classes, shows that under the act of 1894 imports were almost equally divided between the two, but that under the acts of 1897 and 1909 the imports under the basic rates never amounted to as much as 5 per cent of the total. Under the act of 1913 the imports under the basic rates, which in this case included for the first time gray ply yarns, amount to about a third of the total.

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[1] Vide also reports of yarn tests by the Bureau of Standards.

On the basis of the figures for imports from 1895 to 1918, inclusive, it would seem that if the basic rates are to be confined to gray carded single yarns they may as well be omitted and all cotton yarns enter under the advanced classification, which would become the only classification. It is misleading to have basic classifications that embrace less than 5 per cent of the total.

It would be more logical to have a basic classification that would include all gray single yarns, whether carded or carded and combed, since these processes are preliminary to spinning and since it is not possible by physical test to distinguish between the two, and then to have an advanced classification that would include all yarns advanced in manufacture beyond the spun stage; that is, twisted, bleached, dyed, or colored. It is more logical to have a differential on ply yarns than on combed yarns, but if differentials be assessed on both, then the basic rates, which will be on gray carded single yarns only, should be carefully adjusted to measure as nearly as possible the differences in cost of manufacture of such yarn here and in England through ordinary carding and spinning only.

YARN TARIFF INCREMENTS.

In very few foreign tariffs is there a flat rate on all counts. Whether the ad valorem or the specific system be adopted, it is customary to apply the minimum rate to the coarsest counts and to have the increases in rate of duty follow, more or less closely, the increasing fineness of the yarn count. In adjusting the increments in rates of duty to follow the increases in the number of yards of yarn that weigh a pound—that is, the increasing fineness of the count—there are two methods that can be used, either group progression or individual-count progression.

In the group progression, sometimes called the "stepladder," system the range of counts up to a certain point is divided into groups, and higher rates of duty assessed on each successive group. In any stepladder arrangement, whether the rates be ad valorem or specific, there are necessarily inequalities. For instance, under the act of 1913 there are seven increases in rates of duty; six of these are of 2½ per cent and one of 5 per cent. The 5 per cent increase occurs between the counts 39s and 40s. No. 40 is one thirty-ninth finer than No. 39 and costs but very little more to produce, whereas the increase in duty from 10 per cent for 39s up to 15 per cent for 40s is an increase of 50 per cent in the rate of duty. The result of this system, whereby a count may have to pay 2½ to 5 per cent more than the next lowest count, is to cause the foreign spinner to heavy up his yarn to get the lower rate, and at these dividing points there is usually little yarn entered at the higher rate.

If the duty is based on group progression the question arises as to how the grouping is to be effected. The practical results of the present tariff would seem to show, taking into account the difficulty of correctly ascertaining the actual or true count, that the effect of lines of demarcation on ranges of counts ending in 9, instead of ending in multiples of 10, is more apparent than real. It would probably be best, if the group progression system is used, to have the groups end in 5 to make sure that counts around multiples of 10 pay the full duty intended. A spinner can easily heavy his count by one, but changing it by five counts is a different matter, and one that in many cases would make the yarn unacceptable for the purpose for which required. If it is decided to have groups embracing uniformly the same number of counts, say ten counts in each group, it would hardly be feasible to have the first group embrace five counts. It is suggested in such case to have the first group embrace counts up to and including No. 15, that the second group embrace counts from above No. 15 up to and including No 25, that the third group embrace counts from above No. 25 up to and including No. 35, and so on up to say No. 125[1].

Progression by individual counts was employed in the American tariff acts of 1894, 1897, and 1909, but has apparently never been used in any foreign tariff. Theoretically at least it is the fairest system, because the increment between counts can be made small and uniform by making the duty a certain percentage of a cent per number per pound. This system is subject to the objection that the duty can be accurately determined only by accurately determining the count for each individual shipment. This administrative difficulty would increase the cost of collection of the duties, for "bone-dry" tests must be made in every case, whereas under the group progression system the count can be roughly ascertained by reeling off and weighing a lea in the condition entered (including possibly excessive moisture, natural or artificial), and a bone-dry test is necessary only when the preliminary test shows that the count falls near a dividing line.

In reference to the foregoing the following statement by the appraiser of the port of New York, in answer to a query, is of value:

> Question. Under the acts of 1894, 1897, and 1909, when the duty on cotton yarn was stated at so much of a cent per number per pound, what was the actual procedure followed by the examiners? Were most shipments passed on the reputation of the exporter and importer or was it considered necessary to bone-dry test for count each and every shipment? In this latter case would not a restoration of the system of individual-count progression, which is apparently the fairest, prove much more *costly to* administer than a tariff based on group progression?

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[1] Vide further discussion on p. 278.

Answer. Under the tariff acts of 1894, 1897, and 1909, when the duty to be levied on cotton yarn was according to its number, the actual procedure of examiners was as follows:

Revised Statutes 2899, 2901, and 2939 require: That the collector will designate at least 1 package on every invoice and not less than 1 out of every 10 packages, unless otherwise provided, for examination by the appraiser. These packages are sent to public stores, where, in the case of cotton yarns and threads, samples are drawn for the purpose of determination of count of yarn. Acceptance of declaration of yarn count is not based on the reputation of the exporter or the importer, but determined from actual tests. Under the preceding tariff acts, bone-dry tests were not resorted to, the trade not having recognized the necessity of determination of count through such method.

A restoration of levying duty by system of individual-count progression would, from an administrative standpoint, be feasible. The additional cost of administration over the group method resulting from the adoption of the individual count method would hardly be sufficiently material to be considered an element in determining which should be adopted.

AD VALOREM OR SPECIFIC DUTIES.

So far as testimony has been furnished the commission, yarn manufacturers and yarn importers are in almost complete accord on one point—the desirability of specific rates.

The manufacturers object to ad valorem rates because they believe that undervaluations occur and that the full effect of the rates intended is thereby impaired. The importers object to ad valorem rates, particularly after their experience during the war, when ad valorem rates took full toll of every increase in price, because they make it hard for the importers to order in advance with any certainty as to profits. They further object because neither they nor their European connections, except in the case of a big organization like the Fine Cotton Spinners' & Doublers' Association, which keeps its mills posted, can ascertain the ruling price abroad so definitely as to avoid the expense and trouble of having to pay additional duties on the ground that their valuations are lower than the average on that date.[1]

Previous tariff hearings have brought out fully the attitude of cotton manufacturers and their associations on this matter. The following are submitted as samples of some of the letters received from importers dealing with this phase of the tariff on cotton yarn:

> We are importers of cotton yarns. The rate of duty under the tariff bill previous to the one now in force was a specified rate per pound, according to the size of the yarn, and, in our opinion, was much preferable to the present ad valorem rate.
>
> The ad valorem rate being assessed on the market value on the date of shipment causes endless worry, as it continually brings up the question of value, and it is a very difficult matter for anyone to judge as to the real value, there being so many different

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[1] If adopted, the Tariff Commission's recommendation to Congress, in its Report on the Revision of the Customs Administrative Law, that additional duties may be remitted when the undervaluation is shown to have been unintentional, would somewhat tend to modify this latter objection.

grades and qualities. With every honest intention, an importer may advance his invoice to what he considers the market value, but if the appraiser thinks the value should be still higher, he makes a further advance, which carries with it a penalty. It is practically impossible to figure on business for future delivery and know what profit you will make on such business, and we could relate numerous instances where we have contracted to deliver goods duty paid in New York, where the extra duty we have had to pay between our actual buying price and market price on the day of shipment has been enough to cut out all the profit on the business. (Yarn Importer No. 1.)

We think it would be advantageous to the Government, as well as to the importers of cotton yarns, to have a specific duty the same as we had in the last tariff.

The new tariff on yarns makes it hard for our customers as well as the Customs Department in obtaining the correct market price at the time of each shipment. As you probably know, large consumers of yarns place contracts ahead, and if they should base their price, for instance, at $1 per pound, and calculate their duty on this basis, and then three or four months later, when the yarn finally arrives, the market should be $1.50 per pound, they would be compelled to pay duty on $1.50, although they have sold their goods based on $1.

As cotton yarn is sold in different sizes, it would be very easy to have a specific duty on each size. The Government and the importer would then know exactly where they stand on every purchase, and it would not require unnecessary work and investigation on the part of the customhouse to ascertain the exact market value of the yarn at the date of each shipment. (Yarn Importer No. 2.)

We are importers of cotton and silk yarns, principally cotton yarns. In our opinion, the present ad valorem tariff on cotton yarns is unsatisfactory to both the Government and the importers, and we believe a specific tariff more desirable from every possible standpoint. (Yarn Importer No. 3.)

We are importers of cotton yarns from England.

Cotton yarns, as you are aware, are admitted on the ad valorem system. Our orders are placed for future delivery, as it is impracticable for cotton-yarn spinners to produce yarns and sell from stock. In times of poor demand it is possible to get fairly quick delivery, but in times of good demand orders have to be placed six or eight months ahead to insure continuous deliveries. This irregularity of delivery is further complicated by the fact that often the demand is good for coarser yarns whilst at the same time it will be poor for the finer yarns, and vice versa. Also it is often the case there is a good demand and consequent distant deliveries for ply yarns, whilst single yarns are in poor demand and relatively quick delivery obtainable. The varieties of cotton yarns produced are almost beyond limit. The writer was a producer of cotton yarns in the Manchester district of England at one time, and the list of yarns produced in the course of three or four years ran up to over 1,300.

Our difficulty in face of the above is to determine "value at the time of shipment." We know the price we would pay on the date of shipment, but as it would be for future delivery this is not applicable to the yarn when being exported. There is no reported market of standardized grades to refer to with the result we are at a loss to know when we are doing right. In making our entry values we are practically forced to overvalue because we have not the time to go before the appraiser unless the issue is of such importance to warrant same, also for the reason that should we be advanced over our entry value we would have to pay the fine on the percentage basis. We do not quarrel with the latter as it appears above, but in view of the fact that it is impossible for us, or for the appraiser with any degree of justice to determine "value at the time of shipment" for cotton yarn, we submit this is an unnecessary hardship and worthy of your consideration if it be your desire to remove those obstructions to international trade that are of benefit neither to the United States nor the importer.

We would suggest in place of the present system of valuation either a specific duty, or that duty be levied on the price current at the time of delivery, or that duty be levied on the prices actually paid for the goods by the importer. We are not concerning ourselves about the amount of duty at the present, our concern is to have a system by which we will know positively what duties ought to be paid instead of this present system which practically forces us to overvalue.

For our own part we would prefer to have duties levied by specific rates. The writer is not aware of any European country that collects duties on cotton yarns any other way. The trade between England and Germany before the war was twelve times greater than the trade between England and the United States. It was possible for a manufacturer or merchant to take orders c. i. f., duty paid, and be able to calculate his margin correctly. Under the present system of "value at the time of shipment" the duties paid may be higher or lower than at the time of sale which adds a serious element of speculation. In many instances we have had to import yarns at a loss, the value having increased to such an extent that the extra duties payable have been greater than the profit calculated upon. It is our practice to buy in England only after we have made a sale here. Our buying price is fixed and our selling price is fixed but our profit or loss is not known because of the uncertain item of duties. (Yarn Importer No. 4.)

* * * Our business on imported yarns, we are sorry to say, has been very unprofitable. We bought the yarn f. o. b. Liverpool at a fixed price and sold it in this country to the manufacturers at a fixed price; the war came on, which prevented our getting the deliveries as ordered, then prices advanced and of course on account of the tariff laws existing we have had to pay duty on the advanced price and this with the marine and war-risk insurance has made it so that nearly every pound of this yarn we have delivered during the past year or so has been at a considerable loss.

If it could be arranged, we should think the fair way would be to pay duty on the invoice value, not on the market value. It is impossible to figure prices intelligently and know how to protect yourself. The real fine yarns cannot be obtained in this country to any extent and it is necessary to go to England to get these yarns. Our manufacturers need these numbers and it is a whole lot better, we should think, to have the goods manufactured here than to have them manufactured abroad and brought in; but we assure you that we are not likely to endeavor to do any more import business with conditions as they are where it means an absolute loss on every pound sold—not a slight but a considerable loss. If the manufacturers here can not get the yarn there will not be anything to do but bring the fabric in from the other side, which should not be. (Domestic Yarn Commission House No. 1.)

SOME ADMINISTRATIVE FEATURES OF THE AD VALOREM TARIFF ON COTTON YARN.

The following correspondence between the United States Tariff Commission and the appraiser of the port of New York is designed to present clearly certain features of the ad valorem tariff on cotton yarn.

Question by the commission: Has there been, under the 1913 tariff, much difficulty experienced with attempted undervaluations of cotton yarns or threads? Does the question of undervaluation constitute a fair and practical objection to using ad valorem rates or is it of minor importance?

If a manufacturer, say, purchases his year's supply of yarn at a fixed price and the market then moves upwards, what is the custom in levying duty on shipments arriving during the year at contract prices that are less than the market prices then prevailing? Can the appraisers accurately determine the prevailing prices and is the importer penalized when the prices are raised above those actually stated in his contract?

Answer by the appraiser: Under the tariff act of 1913 no great difficulty has been experienced through undervaluations by shippers of cotton yarns or threads. The word "undervaluation" is used in the sense that no fraudulent undervaluations to any serious extent have been discovered. Fraudulent undervaluations constitute declarations by the seller of other than the purchase price or prices agreed upon, fixed or determined to be paid for the merchandise invoiced. Fraudulent undervaluations would, therefore, not constitute a fair or practical objection to the use of ad valorem rates as applying to cotton yarns or threads.

Undervaluations having reference to statement of prices paid or agreed to be paid, not representative of market value on date of shipment, have been frequent. This, however, is not peculiar to cotton yarns or threads. The upward tendency in the last four years has necessarily caused the prices paid to be lower than the market value on a subsequent date of shipment.

A serious difficulty, however, in applying ad valorem rates to cotton yarns or threads is that which applies with equal force to all manufactured articles which are removed one step from raw materials. Stability in price insures more accurate appraisement. Therefore, when the price of a manufactured article fluctuates in accord with the price of raw materials, the change in price is more frequent than in further manufactured articles. It is the practice of manufacturers where an article is the composite of a number of manufactured articles, to contract for a season's raw materials, from the basis of which cost he fixes his season's price. Appraisement, therefore, of articles of the character of cotton yarns or threads is difficult unless perfect coordination exists in the foreign market between the Treasury representative, the United States consul, and shippers to keep the United States customs advised of all fluctuations in price and deliveries in the foreign market on contracts placed.

A further difficulty in determining the value of yarns and threads is the impracticability of ascertaining the quality of yarns. Determination of quality is practical when the article indicates its ultimate use. Quality is in accordance with requirements of use. In the case of yarns or threads, however, the ultimate use can not be determined from physical appearance, except in instances where the yarn is put up in such a manner that it becomes identified. Evenness, strength, continuity of length, peculiarity of twist, and staple employed all have bearing on market value. Many of these features can not be determined from examination, and therefore the opinion of the appraiser can not be upheld except by additional competent evidence before a tribunal.

In the case of orders being placed for a year's supply and during the period of delivery the market advances, it is the privilege of the importer or his agent at the time of entry to add or deduct to his invoice prices to make what in his opinion constitutes foreign market value on the date of exportation. If through neglect or due to either lack of knowledge of the tariff law or foreign market conditions, the importer or his agent enters imported merchandise at less than market value and appraisement is made at higher values, the importer must pay additional duties in accordance with the law.

The law as to entry and appraisement, and assessment of additional duties, is as follows:

Paragraph D requires the invoice to show the purchase price or the price agreed upon, fixed or determined.

Under paragraph I the owner, consignee or agent of any imported merchandise may at the time when he shall make entry of such merchandise * * * make such addition in the entry to or such deduction from the cost of value given in the invoice * * * *which he shall* produce with his entry, as in his opinion may raise or lower *the same to the actual* market value or wholesale price of such merchandise at the time of exportation to the United States in the principal market of the country from which the same has been imported.

Market value is defined in paragraph R as the price at which such merchandise is freely offered for sale to all purchasers in said markets in the usual wholesale quantities, and the price which the seller, shipper or owner would have received and was willing to receive for such merchandise when sold in the ordinary course of trade in the usual wholesale quantities.

Under paragraph K it shall be the duties of the appraisers of the United States and every one of them * * * by all reasonable ways and means in his or their power, to ascertain, estimate, and appraise (any invoice or affidavit thereto or statement of cost, or of cost of production, to the contrary notwithstanding) the actual market value and wholesale price of the merchandise at the time of exportation to the United States in the principal markets of the country whence the same has been imported.

Under paragraph N the appraiser, or person acting as such, shall report to the collector his decision as to the value of the merchandise.

Under paragraph I if the appraised value of any article of imported merchandise subject to an ad valorem duty or to a duty based upon or regulated by the value thereof, shall exceed the value declared in the entry, there shall be levied, collected and paid in addition to the duties imposed by law on such merchandise an additional duty of 1 per cent of the total appraised value thereof for each 1 per cent that such appraised value exceeds the value declared in the entry.

A further reference may well be made to the difficulty of declaration of market value by shippers consigning merchandise or notation on purchase-form invoice of market value for information of importers or agents. Treasury Decision 36448 holds that change in value does not become effective for appraisement purposes until, first, an order is taken for goods held in stock for immediate delivery, or second, if goods are not held in stock, a delivery has been made of goods sold under contract for future delivery. It is necessary, therefore, for correct declaration of market value that the shipper have knowledge of his competitors' transactions, to enable adoption of prices which become market values under the tariff law. This is manifestly impossible except in such instances where the several sellers are organized into one combination and the central office has record of all transactions passing through the books of each one of the concerns. Through this central office the branches of the combine can be properly advised of market value.

In the case, however, where trade is not organized, the shipper is limited to his declaration of market value based on sales and deliveries under his control. It may be, therefore, that while he is making an effort to comply with the ruling as to market value, his lack of knowledge of his competitors' business may result in declaration of values at other than the market value.

RELATION OF SPECIFIC AND AD VALOREM DUTIES.

If cotton yarn imports averaged $1 a pound then ad valorem and specific duties would equalize at 1 cent per pound to 1 per cent ad valorem. If imports averaged 50 cents a pound then 1 cent per pound duty equals 2 per cent ad valorem, and 1 per cent ad valorem equals one-half cent per pound duty. Under the last five tariff acts, from October 1, 1890, up to June 30, 1918, a period of 10,135 days, the average value of all imports of cotton yarn has been, as will be shown more in detail later, 57.07 cents a pound and the duties paid have averaged 16.58 cents a pound or 29.06 per cent. During this period of 10,135 days therefore each cent per pound duty was equal to 1.75 per cent ad valorem, and each 1 per cent ad valorem duty was equal to 0.57 cent per pound. These comparisons are stated to afford some basis in case it is desired to change from one system to the other. An ad valorem duty can be changed to a specific duty of equivalent height by ascertaining the equivalent of the ad valorem duty in cents per pound at any time, but as prices fluctuate the relation between the two can not of course be stabilized.

In changing from an ad valorem to a specific duty, in case the latter should be preferred for cotton yarn, one has to consider that there are two classifications, the basic and the advanced. Under the tariff act of 1913 the basic classification includes gray carded yarn, both single and ply, whereas under the tariff acts of 1894, 1897, and 1909 the basic classification included only single gray carded yarn. The basic classification is the one that needs the most careful adjustment as the advanced classification or classifications are obtained by differentials based on this.

Chart H illustrates the basic yarn duties under the last four tariffs, using, first, the ad valorem system as the base and, second, the specific system as the base.

It is seen, taking 1905 and 1912 as typical of the years under specific tariffs, that the rates when charted on an ad valorem base show very irregular results, with some of the higher-count ranges paying a smaller percentage of their value in duties than some of the lower-count ranges. In the same way ad valorem duties, when charted on an equivalent specific base, show more or less irregular rises, though progressing continually upwards.

Table 23, from which chart H is derived, shows the weight and value of cotton-yarn imports, by groups under the basic classification, for a typical year, 1905, under the 1897 tariff; a typical year, 1912, also 1913, under the 1909 tariff; and the years 1914–1918 under the 1913 tariff. There is shown for each group the total duties collected, also the average invoice value per pound, the equivalent duty in cents per pound, and the equivalent ad valorem duty.

The ratio between ad valorem and specific rates changes with every change in the value. For instance, on yarns over 99s a 25 per cent ad valorem duty in 1914 was equivalent to a specific duty of 17.88 cents a pound whereas in 1918 the same 25 per cent ad valorem duty was equivalent to a specific duty of 37.23 cents a pound.

In general the proposition holds true that the higher the count of cotton yarn the higher the selling price, but it should be noted that this holds true only if the raw material is the same and the method of manufacture the same. Imported yarns are made of various grades and qualities of cotton and manufactured and finished in *various ways* so that it is not unusual that the average value of the imports in any one group may be found out of line with the average value of higher or lower groups. For instance, the imports under the basic classification of gray carded yarn in 1917 showed the following values by groups:

Cotton yarns:	Average value per pound.
1s to 9s	$0.949
10s to 19s	.664
20s to 39s	.587
40s to 49s	.718
50s to 59s	.798
60s to 79s	.856
80s to 99s	.982
Over 99s	1.182

It is seen that in that particular year the coarsest yarns, 1s to 9s, averaged higher in value than the finer yarns in any range under the 80s to 99s range. This was undoubtedly due to the fact that it was impossible to import coarse yarns made of ordinary cotton and that imports of the coarse counts were of special qualities made of the best cotton. Very high grade, hand-knitting yarns, such as 3/2 ply, for instance, made of the finest sea-island cotton, carefully combed and finished, very often average higher in value than yarns as fine as 80/2 of ordinary staple cotton carded.

The irregularity of group price levels in 1917 is noted as being especially striking, this being largely due to the war and the small amounts imported of the coarse counts, but this irregularity is to be found more or less in the imports in other years. Such irregularity of group values is an indication that, due either to a high tariff, to domestic competition, or other special reason, the imports are restricted so that in certain groups the imports are not typical of the full range of qualities made in that range. Specific rates lack flexibility, but in such cases even ad valorem rates do not insure even results unless we consider the yarns that do not come in as well as the yarns that do enter.

Under specific tariffs it is practically always true that high price levels stimulate importation by reason of the fact that the duty, lacking flexibility, becomes a smaller percentage of the total cost; this is aided by the fact that higher selling values mean relatively smaller conversion costs abroad as compared with the relation of conversion costs to selling values at home

TABLE 23.—*Imports of cotton yarn into United States under basic classification.*[1]

	Quantity (pounds).	Value.	Duty.	Unit value in cents per pound.	Duty in cents per pound.	Actual and computed ad valorem rate (per cent).
1905						
Nos. up to 15	3,460	$652.60	$103.82	18.9	3.00	15.91
20-39	38,981	11,574.00	2,210.96	29.7	5.67	19.10
40-49	45,284	14,362.00	4,553.41	31.7	10.06	31.70
50-59	6,118	2,120.00	790.60	34.7	12.92	37.29
60-79	9,957	3,764.00	1,493.51	37.8	14.99	39.68
80-90	2,476	1,497.00	497.55	60.5	20.09	33.24
1912						
Nos. up to 15	38	5.00	.95	13.2	2.50	19.00
21-40[2]	80,714	24,712.00	3,961.61	30.6	4.91	16.03
41-50	21,292	6,631.00	1,958.87	31.1	9.20	29.54
51-60	2,622	1,193.00	314.64	45.5	12.00	26.37
61-80	706	361.00	105.90	51.1	15.00	29.33
81-100	222	113.00	40.85	50.9	18.40	36.15
1913						
Nos. up to 15	33,237	5,165.00	830.95	15.5	2.50	16.09
21-40[2]	66,963	21,370.51	3,443.25	31.9	5.14	16.11
41-50	14,379	5,248.00	1,336.53	36.5	9.30	25.47
61-70	346	231.00	48.37	66.8	14.00	20.94
Over 99	2,121	1,941.00	723.36	91.5	34.10	37.27
1914						
Nos. up to 9	134,532	38,298.00	1,915.50	28.5	1.42	5.00
10-19	58,408	16,766.00	1,257.10	28.7	2.15	7.50
20-39	249,444	87,790.00	8,895.41	35.2	3.57	10.13
40-49	109,138	43,899.50	6,587.43	40.2	6.04	15.00
50-59	313,868	154,931.00	27,112.94	49.4	8.64	17.50
60-79	558,836	297,972.00	59,594.52	53.3	10.66	20.00
80-99	93,063	58,211.00	13,097.49	62.6	14.07	22.50
Over 99	45,690	32,670.00	8,167.50	71.5	17.88	25.00
1915						
Nos. up to 9	70,183	14,755.00	737.75	21.0	1.05	5.00
10-19	107,193	27,975.00	2,098.14	26.1	1.96	7.50
20-39	82,990	29,738.00	2,973.80	35.8	3.58	10.00
40-49	80,740	28,795.00	4,319.25	35.7	5.35	15.00
50-59	280,655	120,835.00	21,146.14	43.1	7.53	17.50
60-79	640,441	310,000.00	62,000.00	48.4	9.68	20.00
80-99	53,236	32,424.00	7,295.41	60.9	13.70	22.50
Over 99	75,930	60,175.00	15,043.75	79.3	19.81	25.00
1916						
Nos. up to 9	672	192.00	9.60	28.6	1.43	5.00
9-19	9,643	3,985.00	298.88	41.3	3.09	7.50
20-39	189,123	67,690.00	6,769.00	35.8	3.58	10.00
40-49	95,339	42,296.00	6,344.40	44.4	6.65	15.00
50-59	542,312	280,626.00	49,109.57	51.7	9.06	17.50
60-79	980,777	546,497.00	109,299.40	55.7	11.14	20.00
80-99	80,405	55,515.00	12,490.88	69.0	15.53	22.50
Over 99	35,915	29,598.00	7,399.50	82.4	20.60	25.00
1917						
Nos. up to 9	214	203.00	10.15	94.9	4.74	5.00
10-19	34,435	22,863.00	1,714.74	66.4	4.98	7.50
20-39	218,828	128,440.00	12,840.00	58.7	5.87	10.00
40-49	282,249	202,654.00	30,398.10	71.8	10.77	15.00
50-59	820,850	654,629.00	114,560.11	79.8	13.96	17.50
60-79	1,936,336	1,658,064.00	331,612.80	85.6	17.13	20.00
80-99	192,922	189,506.00	42,638.86	98.2	22.10	22.50
Over 99	92,626	109,457.00	27,364.25	118.2	29.54	25.00
1918						
Nos. up to 9	1,139	625.00	31.25	54.9	2.74	5.00
9-19	5,396	4,015.00	301.13	74.4	5.58	7.50
19-39	52,832	40,955.00	4,095.50	77.5	7.75	10.00
40-49	129,721	106,638.00	15,995.70	82.2	12.33	15.00
50-59	477,805	529,024.00	92,579.22	110.7	19.38	17.50
60-79	871,937	1,046,819.00	209,363.80	120.1	24.01	20.00
80-99	82,594	107,252.00	24,131.72	129.9	29.22	22.50
Over 99	82,203	122,423.00	30,605.75	148.9	37.23	25.00

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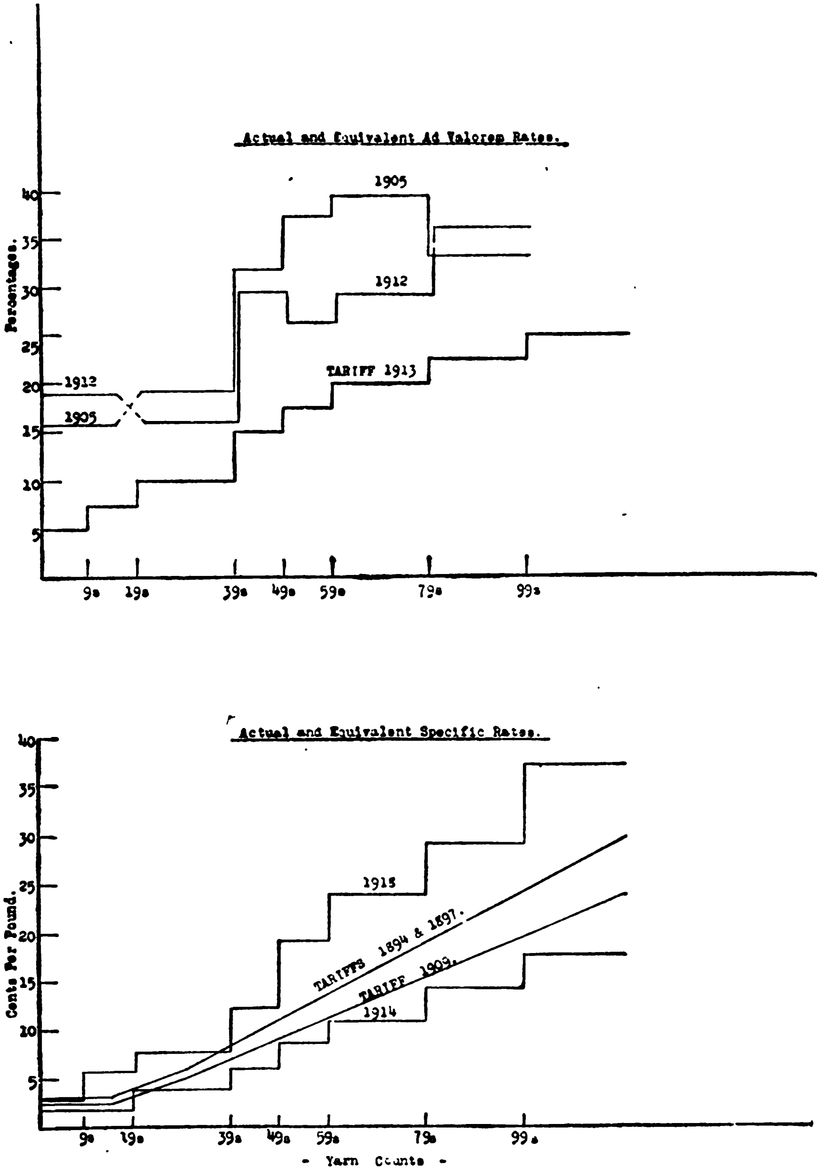
[1] Under act of 1913 basic classification includes ply as well as single carded yarn; under the three preceding tariffs it included gray carded singles only.

[2] Other imported yarns (on which the duty did not amount to 15 per cent) of counts not specified, added to counts of nearest similar price.

CHART H.



Actual and Equivalent Ad Valorem Rates.

Actual and Equivalent Specific Rates.

U. S. TARIFF DUTIES ON GRAY CARDED SINGLE COTTON YARNS

INCLUSIVE IMPORTS OF COTTON YARN UNDER FIVE TARIFF ACTS.

The total imports for consumption of cotton yarn under the last five tariff acts, from October 1, 1890, to June 30, 1918, have been as follows:

TABLE 24.

Tariff acts.	Inclusive period.	Total days.	Total pounds.	Total values.	Total duties.	Average values in cents per pound.	Average specific rates in cents per pound.	Average ad valorem rates (per cent).
1890....	Oct. 1, 1890[1]–Aug. 26, 1894...	1,426	5,395,206	$2,512,825	$1,249,439	46.58	23.15	49.72
1894....	Aug. 27, 1894–July 23, 1897..	1,062	5,844,070	2,159,109	852,634	36.95	14.58	39.49
1897....	July 24, 1897–Aug. 4, 1909...	4,395	59,168,734	27,098,042	8,759,881	45.80	14.80	32.33
1909....	Aug. 5, 1909–Oct. 2, 1913....	1,520	30,328,786	17,035,386	5,354,605	56.17	17.65	31.43
1913....	Oct. 3, 1913–June 30, 1918...	1,732	35,930,533	29,198,348	6,448,711	81.26	17.94	22.09
	Grand totals..........	10,135	136,667,329	78,003,710	22,665,270	57.07	16.58	29.06

[1] Imports for consumption during the period July 1 to Oct. 1, 1890, were not recorded, but as the general imports for this period were 17½ per cent of the general imports for the fiscal year 1891, the same ratio was used in regard to imports for consumption; that is, 17½ per cent of the imports for consumption in the fiscal year 1891 were subtracted as imports under the old tariff.

From the above the average imports and duties collected per year of 365 days are found to contrast as follows:

Tariff acts.	Average per year of 365 days.		
	Quantity (pounds).	Value.	Duty.
1890..........	1,380,960	$643,184	$319,807
1894..........	2,009,555	742,066	293,042
1897..........	4,913,899	2,250,463	727,498
1909..........	7,282,899	4,090,734	1,285,809
1913..........	7,571,965	6,153,231	1,358,995
Grand average..........	4,921,912	2,809,211	600,180

The tariff act of 1890, so far as relates to cotton yarn, was, as in the case of preceding tariffs, so high as to be prohibitive on many classes of cotton yarns. In the four succeeding tariffs there has been a successive lowering of the average rates of duty as shown on the ad valorem basis. The imports of cotton yarn have increased and the embroidery, lace, lace curtain, sueded glove, and other industries have been stimulated thereby with the result that imports of the fully manufactured articles have tended to decline with each lowering of the tariff barriers that made it difficult to obtain from abroad the special yarns required. In spite of the larger average yearly imports of cotton yarns under successively lower tariffs these imports have never amounted to more than a small fraction of 1 per cent of the domestic production. It is to be noted that the actual and computed specific duties in terms of cents per pound dropped considerably under the act of 1894, as compared with the act of 1890, but that since then the duties in cents per pound have increased under successive tariffs. This increase of the duty in terms of cents per pound at the same time that the duty in terms of ad valorem percentages was declining has been due to the gradual trend of the import trade to finer and higher priced yarns.

As a revenue producer the act of 1913, aided by the high prices of cotton yarn during the war, has exceeded all previous tariffs. It is to be noted that, though this is largely due to the war, the trend toward the importation of finer counts, and therefore toward higher average values, was very striking under the acts of 1897 and 1909, and that even without the assistance of war-stimulated prices it is probable that the lowering of the ad valorem duties in 1913 would have resulted in the average duties in cents per pound being very near parity with those under the tariff act of 1909.

A study of the inclusive figures under the last five tariff acts tends to the conclusion that changes in the tariff have played but a small part in retarding or increasing the flow of cotton yarn imports; that on coarse and medium counts foreign yarns can not compete; and that the increasing importation of fine and special yarns is due to the development of the lace and other special industries which as yet have not been able to satisfy their requirements at home.

INCLUSIVE IMPORTS OF COTTON SEWING THREAD UNDER FIVE TARIFF ACTS.

The total imports for consumption of cotton sewing thread[1] under the last five tariff acts, from October 1, 1890, to June 30, 1918, have been as follows:

TABLE 25.

Tariff acts.	Inclusive period.	Total quantity (100 yards).	Total value.	Total duty.	Average values in cents per 100 yards.	Average ad valorem rates (per cent).
1890	Oct. 1, 1890[2]–Aug. 26, 1894	36,505,022	$379,916	$212,946	1.04	56.05
1894	Aug. 27, 1894–July 23, 1897	53,148,620	496,625	243,598	.93	49.05
1897	July 24, 1897–Aug. 4, 1909	198,197,940	2,838,220	990,990	1.43	34.92
1909	Aug. 5, 1909–Oct. 2, 1913	174,795,508	4,640,457	1,035,026	2.65	23.38
1913	Oct. 3, 1913–June 30, 1918	399,858,719	11,168,120	1,675,218	2.79	15.00

From the above the average imports and duties collected per year of 365 days are found to contrast as follows:

Tariff acts.	Average per year of 365 days.		
	Quantity (100 yards).	Value.	Duty.
1890	9,343,852	$97,243	$54,506
1894	18,266,710	170,686	83,722
1897	16,460,125	235,711	82,301
1909	41,973,921	1,114,320	260,549
1913	84,265,838	2,353,559	363,034

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[1] Includes, since July 24, 1897, crochet, darning, and embroidery cottons.

[2] In the absence of records of imports during the period July 1 to Oct. 1, 1890, there was subtracted one-fourth of the imports for the fiscal year 1891 in order to get the imports under the act of 1883 that should be deducted in getting the total imports under the act of 1890.

The foregoing summaries for the last five tariff acts can not be contrasted as accurately as in the case of previous summaries for imports of cotton yarn. The imports under the tariff acts of 1890 and 1894 relate to sewing thread only whereas the tariff acts of 1897, 1909, and 1913 lump together imports of crochet, darning, and embroidery cottons with sewing thread. Allowing for this fact it is seen that the average yearly imports were small and fairly stationary until the passage of the act of 1909, when there was a large increase, and that under the act of 1913 there was again a substantial increase. Soft spun darning cotton of very coarse count and fine six-cord sewing thread have practically nothing in common, so that contrasts of imports of the two combined, stated in terms of 100 yards, can not be said to show anything. The only contrast possible is that of total values, and with the great rise in values during the war even this is of questionable utility. If statistics had been kept so as to show imports of sewing thread separate from imports of crochet, darning, and embroidery cottons, more definite conclusions might be drawn.

Though accurate contrast of imports of like articles in different years or tariff periods is not feasible it is clear that the average yearly values of the imports of sewing thread and of crochet, darning, and embroidery cottons reached a new level in 1909. Though 100 yards does not afford any exact basis, it would appear that the average value of the diverse articles included in paragraph 251 have been increasing under successive tariffs. The average rates under the tariff of 1890 were the highest and the equivalent ad valorem rates have steadily decreased under the last four tariff acts. This is apparently also true as to average equivalent duties in cents per unit of quantity.

As a revenue producer the act of 1913, aided by the high prices of sewing thread and of crochet, darning, and embroidery cottons, has exceeded all previous tariffs. The act of 1909 was a large revenue producer as compared with that of 1897, comparisons being made, of course, in terms of revenue per annum.

The inclusive figures under the last three tariff acts tend to show that, contrary to those of paragraph 250, the rates of duty of paragraph 251 have had an appreciable effect on imports.

APPENDIX—PART I

THE INTERNATIONAL TRADE IN COTTON YARN AND POSSIBLE SOURCES OF AMERICAN IMPORTS

APPENDIX.

PART I.

THE INTERNATIONAL TRADE IN COTTON YARN AND POSSIBLE SOURCES OF AMERICAN IMPORTS.

A brief review of the international trade in cotton yarn is essential to a clear understanding of the American import trade and its relation to the tariff. It serves to bring out the conditions which determine the yarn import requirements of the various countries, and the United States among them; the volume and character of the principal currents in international trade; and the possible competition in the American market from the various sources.

THE PLACE OF THE UNITED STATES AMONG THE PRODUCERS OF RAW COTTON.

A statement of the place of the United States among the leading countries as a producer and a manufacturer of cotton furnishes a background helpful to the discussion which follows.

The production of yarn, as of all manufactures of cotton, is primarily dependent upon the availability of the raw material. The predominance of the United States as the chief source of the world's commercial supply of raw cotton is apparent from the crop figures for 1913, a normal prewar season:

TABLE 26.—*Commercial cotton crop of the world, 1913.*

[Source: United States Census Bulletin 137, "Cotton production and distribution," p. 79.]

Country.	Production (bales of 500 pounds net).	Per cent of total.
World total	21,618,000	100.0
United States	13,545,000	62.7
India [1]	3,692,000	17.1
Egypt	1,496,000	6.9
Russia	1,030,000	4.8
China [2]	620,000	2.9
Brazil	420,000	1.9
Mexico	150,000	.7
Peru	110,000	.5
All others	550,000	2.6

[1] Amount for India does not include cotton used in home manufacture.

[2] Estimate for China represents cotton exported and cotton consumed in spinning mills. Including home manufacture, China's cotton crop was at least 1,200,000 bales.

Of the total world production of twenty-one and one-half million bales in 1913, the United States is seen to have produced thirteen and one-half million bales, or 63 per cent of the total, which represents about the usual proportion of the world supply furnished by the United States in recent years. India is the second largest cotton producer, with a crop considerably smaller in amount and inferior in quality to that of the United States. Egypt is a distant third, with a much smaller crop than either of the first two, but of a decidedly finer grade of cotton than either the American or Indian. Egyptian cotton is relied on for the production of the bulk of fine yarns and high-grade fabrics, and where especially long and strong fibers are required, as in thread making or tire fabrics. Since 1912 the Egyptian variety of cotton has been cultivated in the States of Arizona and California, but while promising, the crop is still relatively small. The very finest long-staple cotton is the sea-island variety, grown mainly on the littoral and the islands off the coast of Florida, Georgia, and South Carolina. Sea-island cotton is much in demand where specially fine, strong yarns are desired, but the annual crop is very limited.

From a commercial point of view, the dependence of the great cotton manufacturing nations of the world upon the American crop is even more complete than is indicated from the above figures. Little of the cotton produced in China and Russia is available for the rest of the world; and a large proportion of the Indian crop, and much of the comparatively small quantities grown in South America and Mexico, are retained for home consumption.[1] American upland cotton is the raw material for the great bulk of the world's staple cotton fabrics. Approximately 75 per cent of the raw material of the Lancashire spinning industry is drawn from the United States,[2] and similar proportions obtain for the Continental cotton industries. In fact, most of the machinery in European countries is adapted particularly to the spinning of American cotton.

PLACE OF THE UNITED STATES AMONG THE MANUFACTURERS OF COTTON.

The relative importance of the United States as a cotton manufacturing nation is indicated in the following table, which shows the consumption of cotton by the principal countries in the last prewar year, the number of active spindles, and the average consumption of cotton per spindle:

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[1] British departmental report on "Textile trades after the war," 1918 (Cd. 9070), p. 6.

[2] British departmental report on "Textile Trades after the War," 1918 (Cd. 9070), p. 8.

TABLE 27.—*Production and consumption of cotton by principal countries during last prewar season; also number of active spindles in each country, and consumption of cotton per spindle.*

[Source: U. S. Census Bulletins on "Cotton Production and Distribution," supplemented by other estimates for countries not there shown.]

Manufacturing countries (ranked in order of number of cotton spindles).	Active cotton spindles, 1914.		Cotton production, season of 1913.		Cotton consumption season of 1913.			Annual consumption of cotton per spindle (computed, pounds).
	Number.	Per cent of total.	Bales of 500 pounds (net).	Per cent of total.	Bales of 500 pounds (net).	Per cent of total.	Quantity (million pounds).	
World total.........	146,397,000	100.0	21,618,000	100.0	21,542,000	100.0	10,771.0	73.6
United Kingdom...........	56,300,000	38.5	....	......	4,440,000	20.6	2,220.0	39
United States..............	32,107,000	21.9	13,545,000	62.7	5,786,000	26.9	2,893.0	90
Cotton-growing States.	12,711,000	8.7	....	......	2,960,000	13.7	1,480.0	116
All other States........	19,396,000	13.2	....	......	2,826,000	13.1	1,413.0	73
Germany..................	11,550,000	7.9	....	......	1,800,000	8.4	900.0	78
Russia....................	9,160,000	6.3	1,030,000	4.8	1,700,000	7.9	850.0	93
France....................	7,410,000	5.1	....	......	1,025,000	4.8	512.5	69
British India..............	6,500,000	4.4	[2]3,692,000	17.1	1,762,000	8.2	881.0	136
Austria-Hungary..........	4,870,000	3.4	....	......	820,000	3.8	410.0	83
Italy......................	4,620,000	3.2	[1]3,000	......	800,000	3.7	400.0	87
Japan....................	2,750,000	1.9	[1]40,000	.2	1,372,000	6.3	686.0	250
Spain....................	2,210,000	1.5	....	......	350,000	1.6	175.0	79
Belgium..................	1,530,000	1.0	....	......	240,000	1.1	120.0	78
Switzerland..............	1,380,000	.9	....	......	110,000	.5	55.0	40
Brazil....................	1,250,000	.9	420,000	1.9	285,000	1.3	142.5	114
China....................	1,000,000	.7	[3]620,000	2.9	398,000	1.8	199.0	199
Canada..................	965,000	.7	....	......	125,000	.6	62.5	65
Sweden..................	560,000	.4	....	......	115,000	.5	57.5	103
Mexico..................	550,000	.4	150,000	.7	110,000	.5	55.0	100
Netherlands..............	500,000	.3	....	......	83,000	.4	41.5	83
Portugal.................	480,000	.3	....	......	75,000	.3	37.5	78
Greece..................	[1]100,000	.1	[1]24,000	.1	[1]22,000	.1	11.0	91
Denmark.................	90,000	.1	....	......	25,000	.1	12.5	139
Turkey..................	[1]80,000	.1	130,000	.6	[1]18,000	.1	9.0	89
French Indo-China........	[1]80,000	.1	[1]15,000	.1	[1]18,000	.1	[1]9.0	89
Peru....................	[1]68,000	......	110,000	.5	[1]14,000	.1	7.0	97
Norway..................	65,000	......	....	......	11,000	.1	5.5	85
Egypt...................	[1]20,000	......	1,496,000	6.9	4,000	......	2.0	100
Colombia................	[1]20,000	......	[1]5,000	......	[1]4,000	......	[1]2.0	100
Venezuela...............	12,000	......	[1]4,000	......	(?)	......	(?)	(?)
Argentina...............	[1]10,000	......	[1]6,000	......	[1]2,000	......	[1]1.0	100
Philippine Islands........	10,000	......	[1]6,000	......	(?)	......	(?)	(?)
Persia..................	....	......	140,000	.6	....	......	....	....
British Africa............	....	......	[1]50,000	.2	....	......	....	....
Dutch East Indies........	....	......	[1]20,000	.1	....	......	....	....
German Africa...........	....	......	[1]13,000	.1	....	......	....	....
Cyprus..................	....	......	[1]10,000	......	....	......	....	....
Haiti....................	....	......	[1]9,000	......	....	......	....	....
Siam....................	....	......	[1]5,000	......	....	......	....	....
All others (estimated).....	50,000	.1	75,000	.3	28,000	.1	[1]2.0	100

[1] Estimates derived from reports of investigators and similar sources.

[2] Does not include cotton used in home manufacture.

[3] Represents cotton exported and cotton consumed in spinning mills. Including home manufacture, the cotton crop for China is estimated at 1,200,000 bales, making the world crop 22,200,000 bales.

Judging by the number of active cotton spindles in 1914, as estimated by the United States Census, the chief cotton manufacturing nations under normal prewar conditions ranked in this order: United Kingdom, United States, Germany, Russia, France, British India, Austria-Hungary, Italy, and Japan. Of the permanent changes that have been wrought by the war, it is as yet too early to judge with any degree of precision. The important types of changes have been three: The extension of cotton spinning in certain countries outside the area of hostilities, particularly the United States, Japan and Brazil; the destruction or removal of cotton machinery from invaded areas of France, Belgium, Poland, and Northern Italy; and the political transfer of certain cotton manufacturing areas of Europe by the redistribution of territory under the peace terms, particularly affecting France and Germany in western Europe, and Austria-Hungary and the newly created States in central Europe. The final adjustments will alter considerably the order of rank of the various cotton manufacturing countries (and their constituent areas) but is not likely to change the composition of the groups.

The United States, which provides about two-thirds of the world's supply of raw cotton is seen to be second to Great Britain in the size of its cotton manufacturing industry, comprising in the last prewar year 22 per cent of the world's cotton spinning machinery, and using 27 per cent of the total volume of cotton consumed. The rank of the American cotton manufacturing industry, as second in magnitude, has not been changed since 1914. The war-time developments within the United States, brought about by the increased demand for manufactures of cotton, principally for military use, were in the direction of extension of spinning facilities and the consumption of an increased portion of the domestic cotton crops.

The varying amounts of cotton consumed in relation to the number of spindles are largely a measure of the comparative fineness of the average yarn spun in each country, and are also influenced by the speed of operation and degree of utilization of the spindles in the various countries. Thus, the average consumption of cotton per spindle in the United States in the last prewar year was 90 pounds a year, while in the United Kingdom the average spindle did not consume more than 39½ pounds per year, indicating a much finer average count of yarn produced in the English industry. The abnormally large consumption per spindle in Japan is the result of both the coarser average count of the yarn spun, and the fuller utilization of machinery through continuous night and day working of the mills.

THE NORMAL WORLD TRADE IN COTTON YARN—IMPORTS AND EXPORTS IN 1913.

The international trade in cotton yarn and thread amounted in normal times to approximately $200,000,000 per year, of which seven-eighths, or more than $175,000,000, consisted of yarn for manufacturing purposes, as weaving, knitting, lace making, braiding, and the like. The value of the sewing thread, knitting, crochet, and embroidery cottons, and similar hand work yarns put up for retail sale, which enter into international shipments, amounted to about $25,000,000 yearly. The present discussion will confine itself mainly to the trade in cotton yarn for manufacturing purposes, which is the character of the bulk of the yarn produced in this country, and is distinct both in its use and its tariff interest from the trade in sewing thread and yarn put up for retail sale.

The following table presents the quantity and value of imports and exports of cotton yarn of the leading trading countries during 1913, the last full prewar year, which may be taken to represent normal conditions:

TABLE 28.—*Principal countries exporting and importing cotton yarn during the last prewar year.*

[Source: Official foreign trade records of each country, or most authentic indirect source available.]

Exporting countries (in order of value).	Exports, 1913.		Importing countries (in order of value).	Imports, 1913.	
	Quantity (pounds).	Value.		Quantity. (pounds).	Value.
Total world trade [1].	762,000,000	$180,000,000	Total world trade [1].	760,000,000	$177,000,000
United Kingdom	210,099,000	73,028,115	China	360,009,867	52,095,676
Japan	179,954,072	35,356,774	Germany	72,622,000	27,328,000
British India[2]	203,961,357	32,173,551	Netherlands [4]	84,781,851	20,022,919
Germany	27,673,000	7,438,000	British India [2]	50,053,242	14,432,015
Austria-Hungary	52,892,759	9,521,943	Turkey [6]	27,497,391	5,646,612
Italy	31,921,063	7,431,848	France	6,018,998	5,497,476
France	16,846,450	4,551,734	Russia	9,274,997	4,522,271
Belgium	13,799,914	2,808,561	Roumania	22,024,514	4,460,202
Switzerland	7,225,795	2,754,580	United States[3]	7,728,649	4,449,254
Netherlands	13,075,238	2,689,983	Austria-Hungary	11,383,668	4,244,914
United States[3]	2,875,000	718,423	Switzerland	7,887,397	4,069,684
Russia	1,388,246	610,327	Belgium	8,488,274	2,850,521
All others (estimated)	300,000	200,000	Bulgaria [5]	13,687,092	2,781,506
			United Kingdom	11,568,620	2,726,077
			Argentina	13,814,277	2,620,211
			Dutch East Indies		1,764,116
			Serbia[5]	7,350,000	1,513,000
			Canada[2]	3,467,420	1,446,495
			Straits Settlements		1,368,930
			Chile	5,450,357	1,355,226
			Denmark	3,805,000	1,308,000
			Australia		1,229,154
			Brazil	4,148,250	1,184,045
			French Indo-China [5]	6,457,450	1,171,286
			Egypt	5,938,939	1,151,652
			Norway	4,447,644	1,142,000
			All others (estimated)	12,000,000	4,600,000

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[1] SPECIAL NOTE.—World trade total not obtainable exactly or in complete detail, owing to lack of or defective records of many small countries and remote areas. This is particularly true of the records of imports, and in view of the varying practices of different countries in compiling foreign trade statistics—as the use of official instead of actual values, or the inclusion of freight and other charges in import values—the import figures of the various countries are not all directly comparable.

[2] Fiscal year for India and Canada ended Mar. 31, 1913. Indian figures are for seaborne trade.

[3] Fiscal year United States ended June 30, 1913; weight of exports estimated from value.

[4] Weight incomplete, none given for yarn to value of $1,471.000.

[5] Records are for 1912; 1913 not available.

[6] Import total derived by combining exports from principal countries shipping to Turkey.

The three principal yarn exporting nations are seen to be the United Kingdom, Japan, and India; lesser amounts are shipped from Germany, Austria-Hungary, and Italy; and comparatively small amounts from the other countries of Europe. The foreign sales of American yarn were an almost negligible factor in the world trade prior to the war. The striking expansion of the American yarn trade during the war and the likelihood of its permanence are discussed in Chapter V.

The place in export trade held by the leading cotton manufacturing countries is determined not so much by the size of the domestic industry, as by the size of the exportable surplus, which is based upon the extent of the home market. It may be measured by the total requirements of a country's home population as compared with the total output of its cotton mills, taking into account that the per capita consumption of cotton goods—and cotton yarn is, in the main, but the raw material for the manufacture of cloth and apparel—varies widely in different countries according to climate, mode of living, and general state of culture and prosperity. The United Kingdom, with its highly developed cotton spinning industry, and a population of only forty-five millions, would naturally be more important in the world trade as an exporter, than would the United States, with a domestic market comprising over one hundred million persons, and with the largest per capita consumption of cotton goods of any people in the world. And it is found that the British cotton industry regularly exports 80 per cent of its annual output, whereas the United States produces over 90 per cent of its cotton goods for its extensive domestic market. Similarly, comparatively small countries like Japan, with developed cotton industries, would be expected to export considerable quantities of cotton yarn, while the full production of the Russian cotton mills is hardly adequate to supply the needs of the country's large population.

The three principal countries importing cotton yarn in 1913 were China, Germany, and the Netherlands; British India ranking fourth; with Turkey and the Balkan countries, mainly Roumania and Bulgaria, following in amount of annual imports. Considerable quantities, although comparatively of lesser importance, are normally imported by the other countries of Europe; by the United States and Canada in North America; by Argentina, Brazil and Chile, in South America; the East Indies, and Egypt. China, easily the largest importing country, absorbed in 1913 nearly one-half in weight and about 30 per cent in value of all cotton yarns shipped between nations. The American import trade in 1913 accounted for less than 1 per cent of the total quantity of yarn carried in international trade, and about 2½ per cent in point of value.

CONDITIONS DETERMINING THE MAIN CURRENTS IN INTERNATIONAL YARN TRADE.

The principal currents in international trade in cotton yarn, and the position of each country as an exporter or importer of yarn, are largely controlled by the relation between the amount and character of the output of the domestic spinning mills, and the particular requirements of the looms and other yarn-consuming machinery of *the country*. For weaving—whether on power-driven machines in modern factories or on hand looms in the homes of peasants—is carried on in almost all countries beyond the primitive stage. Backward and semi-developed countries, as a rule, have almost no spinning machinery, and in so far as they do their own weaving and knitting rather than import the finished cloth and wearing apparel, they rely upon imports for their supplies of cotton yarn. Such is the character of the yarn requirements of Turkey, the Balkan States, and parts of South America.

A number of countries, somewhat more advanced in cotton manufacturing, possess extensive yarn-consuming industries, calling for larger quantities or finer qualities of yarn than can be well supplied from domestic spindles, and consequently figure largely as importers of yarn to supplement the domestic supply. The large yarn importations into British India, and into the more important South American Republics, arise from such a situation.[1]

On the other hand, certain countries with particular advantages for extensive spinning industries, have set themselves to produce for export large quantities of yarn beyond the requirement of the domestic consuming capacity, and depend upon export trade for the prosperity of their cotton mills. The most striking instance is that of the United Kingdom, which has easily the largest and most widely distributed yarn export trade of any country, supplying in 1913 about 30 per cent in volume and 40 per cent in value, of the total international shipments. Similar cases are those of Japan and India, with advantages of cheap labor and relative proximity to their markets, who compete in supplying the vast demand of the Chinese hand-loom industry for coarse yarns.

Moreover, with the general development of cotton spinning throughout the world, there has grown up a specialization on the part of the particular countries in producing yarns of certain fineness, quality, or finish. By virtue of their peculiar advantages—either the result of an early start and acquired skill, advantages of climate or character of labor, peculiarities of organization, conditions favoring the use of certain materials or machinery, or advantages in the availability of cheaper machinery or materials—these countries have found themselves able to produce certain counts or qualities of yarn more easily or more economically, and have come to be looked to as the regular sources of supply for these yarns, unless prohibitive barriers in the way of difficulties of transportation or excessive import duties intervene.

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[1] A word in retrospect as to the general development of the international yarn trade, and of the present tendency toward finer yarns, is pertinent at this point. In the early days of cotton manufacture, yarn production was in the hands of a few countries, possessing the machinery and developed skill, which supplied the import requirements of much of the rest of the world. The total volume of trade was decidedly smaller, and consisted mainly of low counts. As the use of cotton goods increased the world over, with the increase in annual output of the raw material and the extension of manufacturing facilities, cotton spinning mills came to be established in countries which formerly relied upon the old-fashioned hand-spinning in the homes, or supplied themselves with yarns from abroad. Coarse and medium counts make up the bulk of the yarns used, and are the easiest to spin, depending least upon the high skill, specialized machinery, or exceptional climate favoring the older manufacturing countries. The export trade to the newer countries tended to diminish, therefore, on the lower-count yarns, as the domestic mills came to supply an increasing part of the domestic market.

The total volume of the international trade in cotton yarn did not, however, decline, but with the ever-widening use of this cheapest of clothing materials, the exporting countries have been forced, in a measure, to resort to the production of medium and fine counts and specially processed yarn, which the newer countries had not yet come to make or could not produce successfully. Such has been the experience of the Lancashire spinning industry of England, which has found its former markets for coarse yarn on the Continent of Europe, in India, and in the United States diminish during the last few decades, as the growing cotton industries in these countries came to supply an increasing part of the home needs. Import requirements of the countries where cotton manufacturing is a more recent development tend gradually toward finer counts, which leads the old exporting countries to "go finer" in the character of the yarn spun and exported.

In many cases, no inherent natural or technical reason exists why the same products could not be made in the importing countries, except that it would involve so much higher cost, or call for such changes in method of manufacture, as to make it more profitable to import that part of the yarn requirement from the country known to have comparative advantages for its production. Often the quantity of yarn of a particular quality or process required in the domestic consuming industry of a country would not be large enough to afford sufficient inducement to domestic spinners to develop that branch of the industry.

This situation explains, in large part, the dependence of Germany and many Continental countries, as well as of the United States, upon the English spinning mills for their supply of certain kinds of yarn. The advantages of the British manufacturers for producing very fine counts, mule-spun yarns from Egyptian cotton, fine doubled yarns, and specially-processed yarns for lace, hosiery, and thread-making, has rendered it more convenient for these countries to import than to produce such yarns of this character as their domestic industries required. Similarly, Germany came to be looked to for coarse waste yarns, for "vigogne" or imitation wool yarns, and particularly for dyed, glazed, and other specially processed yarns. Much of the yarn imports of England have consisted of fine English-spun yarns which had been sent over to the Continent for special processing. Similiar advantages have been possessed by the Swiss for producing fine bleached yarns particularly suitable for embroidery.

These are the chief factors underlying the main international currents in cotton yarn under normal conditions. They explain the position of the various countries as importers or exporters and the character of the yarns which they buy or sell abroad. The growth of cotton spinning in the newer countries to the point of self-sufficiency for the bulk of the lower-count yarns, has in many instances been definitely fostered by high protective duties intended to exclude imports. Such has been notably the case in Russia and Brazil. On the other hand, improvements in transportation have facilitated the working out of these forces, and the contiguity of the chief manufacturing nations of Europe, bringing the spinning mills of one country near the weaving mills across the border, tends to explain the seeming anomaly of almost every manufacturing country of Europe being both a buyer and seller of cotton yarn.

In the light of conditions just sketched, there may be discerned three outstanding types of movements in the international trade in cotton yarn which are not likely to be radically altered or diverted. They are:

(*a*) The trade in coarse and medium yarns with the countries less industrially advanced, of which the shipments to China, the Balkans, and South America are types.

(*b*) The inter-European trade, in specialties, or because of proximity, of which the German imports from England and the Swiss imports from Germany are types.

(*c*) The shipment to manufacturing countries outside of Europe of fine counts or specially processed yarns, which the exporting countries have particular adaptability to produce more successfully or more economically.

It is evident from the detailed analysis in the preceding chapters of the American import trade, that the shipments of cotton yarn to the United States belong in the last class. With a highly developed and diversified cotton manufacturing industry which not only supplies 99 per cent of its own requirements from its domestic spinning frames but has developed an export trade in its staple lines—coarse and medium counts—several times the volume of its total annual imports, the import requirements of American industries render the United States a buyer in the yarn marts only of certain kinds of yarns—very fine yarns above the counts spun here in quantity; doubled yarns, mule-spun from Egyptian cotton; and yarns specially processed or prepared for use in particular industries.

POSSIBLE SOURCES OF AMERICAN YARN IMPORTS.

In view of the character of the yarn import requirements of the United States, it is hardly probable that any new sources of imports will develop in the near future to compete in the American market, beyond those countries which for years prior to the war constituted the sources of our imports. The great bulk of cotton yarn shipped in international trade, excepting only the exports from Great Britain, is of coarse and medium yarns, in only a small measure exceeding 40s, and rarely over 60s. The aggregate value of the international shipments of cotton yarn in 1913 indicated an average price of about 23½ cents per pound, which was about the normal price for coarse yarns ranging from 16s to 20s. Of the six cotton manufacturing countries whose exports in normal times amounted to as much as $5,000,000 a year, Japan and India have been seen to be principally purveyors of coarse yarns to the Eastern markets; few cotton mills in Germany are known to spin in quantity above 50s; while the trade of Austria-Hungary, or what was formerly Austria-Hungary, with the neighboring countries, and the shipments of Italy to the Balkans, the Near East, and South America, have been chiefly of low counts. The only country which produces in quantity and is in a position to export fine cotton yarns of the character which are imported into the United States has been Great Britain, and it is Great Britain that has supplied the bulk of such foreign-spun yarns as have in the past been required by American industries. In fact, a large part of the fine yarns required by Germany, the Netherlands, Switzerland, and other Continental countries, as well as the United States, are regularly imported from England.

It has been pointed out in Chapter II that in the 28 years from 1891 to 1918 fully 85 per cent of all cotton yarn imported into the United States came from the United Kingdom, with about 11 per cent from Germany, 2 to 3 per cent from Switzerland, about 1 per cent from France, and less than one-half of 1 per cent from all other countries combined. These proportions have been substantially maintained, irrespective of the changes in duties that were made during that period.

England is thus seen to have been the chief source of our imports. German spinners could not compete in the American market either with domestic coarse yarns or with the fine or special yarns from England, and their sales in the United States, as has been pointed out in an earlier chapter, were mainly due to special finishes—fast dyeing, high polishing, or careful mercerizing. It is in fact declared that most of the fine yarns from Germany, as well as a part of the medium counts, were spun in England and only finished in Germany. The yarns imported from Switzerland were found to be chiefly embroidery yarns, which the Swiss, as leaders in embroidery manufacture, are naturally best able to produce. Their particular excellence in bleaching and putting up the yarn in form ready for use on embroidery machines largely explains the continuance of the comparatively small quantity which is regularly imported from Switzerland. Beyond these three countries, and the slight amount from France, no other countries figured appreciably as sources of American yarn imports prior to the war, and so far as can now be judged none are likely to do so in the future.

POSSIBLE IMPORTS OF COTTON YARN FROM JAPAN.

Apprehension has been expressed in some quarters as to the possible competition in the American market from Japanese yarns. An examination of the official American import records shows that the shipments of cotton yarn from Japan to the United States has in the past been negligible. During the ten-year period, 1909–1918, cotton yarn imports from Japan amounted to the insignificant total of 17,716 pounds, valued at $8,723.[1] Nor was there any tendency in these imports to increase even under war conditions. This is explained by the fact that Japan does not produce and therefore can not export in any quantity the yarns which American users find it desirable to import.

In the prewar years, over 80 per cent of Japanese exports was of 16s and 20s, coarse numbers, for the Chinese market, and only about 1 per cent of the Japanese exports was finer than 42s.[2] Of the total output of the Japanese spinning mills in 1914, 97.6 per cent was of coarse and medium counts, i. e., up to 42s, the very yarns on which the American industry has the greatest advantage in competition (as seen from the discussion in Chapter V), and is not only fully self-sufficient, but has come to export in increasing quantities. Only 2.4 per cent of the Japanese output was finer than 42s and the quantity small. The latest available reports of the Japan Cotton Spinners' Association show that there has been little material change in that situation since 1914, and, in fact, the total annual Japanese exports of cotton yarn has shown a decline in the years since 1915 compared with the quantity of prewar exports, despite the world demand and the high prices that could be obtained.

Moreover, the quality of the Japanese yarn is decidedly poorer than the American and would hardly be acceptable in the American market. This is attributed to the lower degree of skill of the average Japanese spinner, combined with a less careful operation of machinery, with an eye to output rather than quality, and the fact that a lower grade of cotton is used than in the American mills in spinning the same count of yarn. For of the total consumption of raw cotton by Japanese mills, averaging during the three-year period 1915–1917 approximately 2,000,000 bales a year, practically all drawn from abroad, the import records show that 65 per cent consisted of Indian cotton, 25 per cent of American uplands, and most of the remainder of Chinese cotton, with a slight amount of Egyptian growth.[3] Indian cotton, which constitutes by far the largest part of the material used in Japanese yarns, is short and coarse in fiber, and suitable only for low-count yarns and coarse fabrics which are not marketable in the United States. It has already been pointed out that the American mills are most efficient, and possess the greatest advantages in production, in the spinning of yarns from ordinary American cotton, and particularly in competition with Japan the American mills have an advantage—measured by the freight charges on the raw cotton to Japan and the return charges on the yarn to the United States—which counterbalances any advantage on the part of Japan in the way of lower spinning cost.

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[1] Annual Reports on Foreign Commerce and Navigation of the U. S. Department of Commerce.

[2] Special Consular Report No. 74, Japanese Cotton Goods Industry and Trade, U. S. Department of Commerce, which supplements Special Agents Series No. 86, Cotton Goods in Japan, by W. A. Graham Clark.

[3] Annual Return of the Foreign Trade of the Empire of Japan, 1917, pt. 1, p. 448.

In other words, the Japanese cotton mills neither spin the counts nor work with the quality of material which American yarn-importing industries could use. With regard to the low counts, moreover, which are the strength of the Japanese industry, it is reported that in the knitting-yarn market of Hongkong, for instance, which Japan preempted during the war-time scarcity of other yarns, the articles produced from Japanese yarns have proved so decidedly inferior that a good demand will again exist for English and American yarns, even at a higher price, as soon as they can be had.[1]

From all evidence available, therefore, it appears that the only country which can supply the yarns which American industries are likely to import, and from which any measure of competition in the home markets may be expected, is Great Britain. Small quantities of specially processed or put-up yarn will probably again come in from Germany and Switzerland. But there is little ground to expect, under any measure of import duties, that new sources of considerable imports will develop, or that American spinning industries will encounter serious competition from any new direction.

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[1] Report of American consul at Hongkong in Commerce Reports, Nov. 21, 1918.

APPENDIX—PART II

COMPARISON OF AMERICAN AND FOREIGN IMPORT DUTIES ON COTTON YARN

APPENDIX.

PART II.

COMPARISON OF AMERICAN AND FOREIGN IMPORT DUTIES ON COTTON YARN.

An examination of the tariff provisions of the principal foreign countries on cotton yarn—and cotton thread, which is usually provided for along with yarn—in comparison with those of the United States, is of value from two viewpoints. Cotton yarn being at once a manufactured commodity and the material for further manufacture, the general height of the duties imposed upon its importation constitutes a significant indication of the general industrial policy or attitude of a country, being a measure both of the tendency to protect the domestic producers of similar products, and of the tendency to favor the industries which consume the imported products, by taxing lightly or not at all the materials they require in manufacturing.[1] These two tendencies or policies would be found inconsistent only in so far as the yarns which the importing industries require are of a character obtainable within the country. In the case of the United States, it has been seen that the area of possible competition with domestic products is limited to a comparatively small part of the imported yarns.

THE ESSENTIAL ELEMENTS IN A COTTON YARN TARIFF SCHEDULE.

In view of the wide range of fineness in which cotton yarn is produced, and the variety of processes or conditions in which it may be imported—and considering the varying degree of advantage or disadvantage which a particular country may have for producing the various kinds of yarns—the specific provisions or adjustments of duties in the tariff systems of the different countries are of suggestive value in any reconsideration of the American tariff schedule on cotton yarn. In the drawing up of a comprehensive schedule on cotton yarn, the features of particular importance are:

(*a*) The method of assessment, whether specific or ad valorem (so many cents per pound, or such a percentage of the value of the goods), and if ad valorem, how the dutiable value is to be arrived at;

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[1] For except where a country is regularly an importer of large quantities of cotton yarn, as in China, or imposes very high duties, as did Russia, the duty on cotton yarn is hardly to be regarded as primarily a source of considerable federal revenue.

(*b*) The general height of the basic scale of duties, and the relative treatment of coarse and fine yarns;

(*c*) If the basic duties are graduated according to the fineness of the yarn, the divisional steps of the various groups, and the manner of adjusting the range or progression of duties;

(*d*) The processes or conditions which it is considered desirable to tax or protect by a differential or additional duty above that for unbleached singles, which is the crude state of the yarn as spun and is the usual basic classification in tariff schedules; and

(*e*) The treatment of cotton thread and yarn put up for retail sale, if these are provided for apart from yarn for manufacturing.

THE TARIFF SYSTEMS OF 25 COUNTRIES COMPARED.

The accompanying tabulation presents an analysis of the cotton yarn tariffs of the principal manufacturing or importing countries, grouped by continents. It is based upon a study of the last prewar tariffs of the various countries, and while an effort has been made to take account of all revisions and changes up to January 1, 1919, in the present unsettled state of international commercial relations, complicated by the import licensing systems or absolute prohibitions adopted by certain countries, the regulations now actually operative would in some cases be most difficult to ascertain. Representing as these do, however, substantially the tariffs that were in operation at the outbreak of the war, they serve our present purpose of indicating the specific provisions adopted by the various countries to regulate the importation of cotton yarn under normal conditions.

As suggested in the discussion of the conditions determining the principal currents in international trade, variations in manner of treatment or regulation of imports of cotton yarn may in certain cases be less an indication of a definite policy on the part of a country than a reflection of the stage of advancement of the domestic spinning industry or the particular import requirements of the yarn consumers within the country. Thus, Argentina or Roumania, where cotton spinning as a modern industry is comparatively in the early stage of development, can hardly regard imported yarns as possible competitors of domestic products, but rather as the raw material required by the local weaving or knitting plants, and in the case of the latter country, also by the hand-loom weaving industry, still carried on extensively in the homes of the people. Low duties on yarn imports, or none at all, would be the expected tariff policy under such conditions. On the other hand, the fact that countries like Spain or Brazil figure almost not at all as importers of cotton yarn, may well be the direct result of very high import duties imposed for a long period of years, the consequent exclusion of imports, fostering a highly-protected domestic spinning industry sufficient for most needs.

For comparison with the American tariff, therefore, the provisions of the 25 countries analyzed in the tabulation are not all of equal value. Regarding first the 15 principal yarn importing countries in the last prewar year, among which the United States ranked ninth in value of imports, the low duties or absence of all duties in the case of 7 out of the 15 is worthy of note. Thus, the Netherlands and British India admit cotton yarn free of duty; Roumania and Argentina impose a nominal duty of a fraction of a cent per pound on yarns of all counts; while China and Turkey collect a flat ad valorem duty on most imported articles, limited by agreement with the great powers to approximately 5 per cent in the case of China and 11 per cent in the case of Turkey. While three of the last four may be described as countries whose domestic spinning industries are comparatively undeveloped, it is notable that the United Kingdom, the most highly developed cotton manufacturing country in the world, likewise imposes no duty on such cotton yarns as are imported.

With the elimination of the above countries from the discussion, there remain among the leading yarn importing countries, whose tariff policies and provisions are of interest for the United States, the following: Germany, France, Russia, Austria-Hungary, Switzerland, and Belgium. Were Italy and Holland added, this list would be seen to comprise, with the United States, the principal importers of fine and processed yarns, and the very group of countries whose tariff policies are of most interest for each other, and therefore most fairly comparable. Certain other countries of lesser importance as importers—their annual imports in 1913 amounting to less than $2,000,000 in value—are also included in the study, in order to secure a more comprehensive survey of foreign tariffs. These are Italy, Spain, Serbia, and the Scandinavian countries, in Europe; Japan, in Asia; Canada, in North America; and Brazil and Chile, in South America.

METHOD OF ASSESSMENT—SPECIFIC OR AD VALOREM.

It appears from Table 29 that in 17 of the 22 countries which provide for any duty on cotton yarn—and these are all advanced countries—the duty is purely specific: so many cents per pound on yarn of such a description. Of the other five, those of Argentina and Turkey are ad valorem in form only, being expressed as a certain percentage of a fixed or agreed value, which renders the duty in effect definite and specific. The Chinese duty is now specific for gray and bleached yarns, which make up the bulk of the imports, and according to the schedule recommended by the China tariff revision commission, all duties will be specific, although based upon past average market prices so as to approximate 5 per cent of normal value.

The United States and Canada are alone among important countries in collecting a duty on cotton yarn according to value, actual or declared. It is important to note, however, that the total imports into Canada are comparatively small—averaging in the five-year period 1913–1917 roughly, 3,500,000 pounds annually, valued at $1,500,000, of which less than one-fourth was subject to any duty. All yarns of count 40 or finer, which make up three-fourths in value of the total Canadian imports, and a small quantity of glazed yarns for shoe laces, are admitted free of duty. All other yarns under 40s count are subject to a general rate of 25 per cent ad valorem, with goods of British origin paying a preferential rate of 17½ per cent. The total amount collected from the imports of cotton yarn into Canada in the last prewar year, 1914, was only $53,000, which was equivalent to 4 per cent of the value of all yarns imported. The amount of duty collected on American yarn imports during the same year averaged 23 per cent, all yarns imported being subject to duty.

The United States is thus seen to be the only country normally importing any considerable quantity of cotton yarn subject to duty, which assesses the imports on an ad valorem basis. The goods are appraised at the current value at time of shipment in the principal markets of origin, and it is the belief of customs officials that the practice of undervaluation is prevented through the activity of a special group of men composing the C. V. R. (Comparative Valuation Report) Bureau, who keep in constant close touch with price changes in foreign markets.

Ad valorem duties possess the merit of always representing the same proportion of the current market value of the goods but, since the amount of duty changes with fluctuations in the value of the goods, complaint has been made by importers that in actual practice ad valorem duties on cotton yarn are inequitable and tend to introduce uncertainty in long-time transactions. The raw material in cotton yarn making up in most cases the larger part of the total cost, any duties which change with fluctuation in total cost would perforce not maintain any constant relation to the conversion or spinning costs, which constitute the basis of competition between the foreign and domestic producers. Under normal conditions actual conversion or manufacturing costs do not change materially either here or abroad, except over a long period of time. During the latter years of the war, the rising price of raw cotton, the war time difficulties of production, and the scarcity of supplies caused market prices on all cotton goods to advance from day to day without regard to cost of production. The market value at time of shipment, upon which the duty was assessed, was often much higher than the purchase price, and the amount of duty then collected constituted a larger percentage of the actual buying price than the rate of duty would indicate, and not only afforded the domestic producer an increased margin of protection all out of proportion to any change in conversion costs, but was greater by an amount that could not be forecast by the importer at the time orders were placed.

Even under more stable conditions of trade and narrower margins of profit, the likelihood of an increase in the amount of duty because of a rising market at the time of delivery, and the inability to figure at the time of contract on a definite landed cost of the goods, duty paid, introduces an element of uncertainty into all transactions and not infrequently causes loss to the importer, with instability in his selling quotations, and possibly higher prices to domestic purchasers to cover the contingency of higher duties.

There is no intention here to minimize the difficulties attendant upon the adjustment of a scale of specific duties that will not bear unfairly upon particular lines of imports, and that will approximate some fairly predicable percentage of cost or value on all classes of goods which it is desired to treat equally. The gain in fairness on long-time contracts—and a large part of the yarns imported, being specially processed, are contracted for several months ahead of need—and in certainty as to the amount to be charged off to duty on a particular purchase, have been urged upon the Commission by the trade, and seem worthy of consideration, in addition to the general question of the advantage of specific over ad valorem duties, on articles of this character, suggested above. The situation seems particularly worthy of note, in view of the fact that practically all other countries collect the duty on cotton yarns as a specific amount per pound on yarns of such a fineness or character, instead of as a percentage of value.

COMPARATIVE HEIGHT OF BASIC DUTIES OF PRINCIPAL COUNTRIES.

Next in importance to the manner of its assessment is that of the comparative height of the duties, and the method of adjustment according to fineness and condition. As the great bulk of the yarns in international trade is in the crude state as spun, without being twisted or further processed, the duties on gray carded single 3s yarns are taken as the "basic duties" for the purpose of this comparison of duties in various countries. Column (*a*) of Table 29 summarizes the basic duties, or range of duties, where they are graduated according to fineness, and indicates the counts set as the dividing points of the groups subject to progressive duties. For convenience in comparison, Chart I presents the various basic duties graphically, in terms of cents per pound, for the full range of counts up to 140s, above which the trade is fairly small and no differentiation of duty is made except by one country (France). The basic rates being the lowest, and all other yarns being subject to an additional amount or percentage, according to condition, this chart constitutes as representative a comparison of the various tariff systems as is possible.

Where the basic rates are assessed ad valorem, i. e., in the United States, Canada, and Turkey, they were converted for the purposes of this comparison into equivalent specific duties on the basis of the import values obtaining in 1914. For the United States the average duties paid for each range of yarn counts were computed for the fiscal year 1918 as well, to show the change in amount of duties under the increased level of prices.

Taking 1914 as representing normal conditions, the striking fact brought out by Chart I is that the duties levied upon yarn imported into the United States, even under the prewar level of prices, were decidedly higher than those of any other advanced industrial country, being exceeded only by Russia, Spain, and Brazil, and on fine yarns exceeding even Brazil. These three countries are noted for their very high import duties on almost all commodities. In the case of cotton yarn in particular, the height of the duties—ranging from a flat rate of 13.5 cents per pound for Brazil, to graduated duties reaching in the case of Spain 24 cents per pound, and Russia 38¼ cents per pound—seem calculated to be practically prohibitive of the importation of any yarns at all obtainable within the country, are entirely out of proportion to possible differences in costs of production, and show little relation to any other basis on which a tariff schedule is normally framed.

The American tariff is graduated into eight classes, according to fineness, the average amount of duty advancing sharply from one group to another. On coarse and medium yarns, that is, under 40s count, the American duties in 1914 were almost as low as those of most European nations, which, with India, China, and Japan, constitute also the chief cotton manufacturing nations of the world. The duties on such imports into the United States ranged from 1½ to 3½ cents per pound, while the corresponding rates of the chief European countries, excluding those mentioned above as imposing very high duties, were in most instances between 1 and 2 cents per pound. American imports of coarse and medium yarns are slight, in fact negligible, in comparison with the vast annual output of the domestic cotton mills. Moreover, as has been pointed out in Chapter V, the height of the duty on imports of yarns under 40s, which American spinners are exporting in increasing quantities, is, from a protective viewpoint, of little consequence.

It is on the broad range of counts above 40s, classed under the general term of "fine yarns," that the interest in the American cotton yarn tariff centers. Here the disparity between the duties on imports into the United States and into the principal foreign countries is most marked, and this disparity increases with the increasing fineness of the yarns. Thus, on medium fine yarns, 40s to 80s counts, which represent substantially the range of American fine yarn production for sale or in considerable quantity, the import duties into the United States in 1914 ranged from 6 to 10¾ cents per pound, representing from 15 to 22½ per cent of the market value of the yarns imported. A glance at that section of the chart shows that the American duties were considerably above those of the principal foreign countries, being twice as high as the highest, France, whose duties on 40s to 80s run from 3 to 6 cents a pound, and decidedly higher than those of the other countries, whose duties did not rise above 5¼ cents for the finest yarns under 80s, and for the most part were between 2 and 4 cents a pound.

On the range of yarns most properly termed "fine"—from 80s to 120s—the difference between the American and other tariff rates is still more marked. Yarn imports into the United States of 80s to 100s paid in 1914 an average duty of 14 cents a pound, and those between 100s and 120s, slightly under 18 cents a pound. In comparison with this American duty, averaging for the 80s to 120s range somewhat over 15 cents a pound, it will be observed that the duties of industrially important foreign countries did not exceed 5¼ cents per pound on yarns as fine as 120s, the majority centering between 3 and 4 cents a pound. The only notable exception is that of France, which divides the range into four groups, paying from 6 to 9½ cents per pound, or approximately half the corresponding American duties.

THE DIVERGENT POLICIES IN THE TREATMENT OF FINE YARN IMPORTS.

The countries in which cotton yarn is spun above 80s, in any considerable quantity or for sale, is limited to Great Britain, France, Switzerland, Germany, and the United States. For yarns finer than 120s, it is safe to say that the consuming industries of most countries, with the exception of France, are dependent for the largest part of their supplies upon the fine spinning mills of Lancashire, England. It is significant, therefore, that as yarns of this range of fineness are reached, the tariff policies of important countries diverge radically. One policy is exemplified by France and Germany, which have continued to advance the amount of duty per pound with increasing fineness of the yarns; the German duties advancing from 2.7 to 3 cents a pound at 83s, and from 3 to 4.3 cents at 102s, and the French duties rising from 6.1 to 7 cents a pound at 83s, to 8.3 cents at 107s, and to 9.6 cents at 119s. Allied to these are the tariffs of Italy and Japan, which continue practically the same duties on all yarns above 70s or 80s—5¼ cents per pound in the case of Italy and 4¼ cents for Japan.

In striking contrast is the policy of a number of other European countries, which reduce materially or omit altogether the duties on yarns above a certain fineness. Thus, Belgium reduces the duty on yarns 77s or finer to less than half a cent a pound; Austria reduces the rates progressively on yarns above 80s, and admits free of duty all yarns over 110s in fineness; while Switzerland sets the same duty on yarns from 20s to 119s, above which the duty is reduced to about half a cent a pound. A more striking instance of the same policy is found in the case of Canada, which admits all yarns 40s or finer free of duty, although yarns under 40s are dutiable at 25 per cent of value.

The policy of these four countries, in reducing or abolishing the import duties on cotton yarn above a certain degree of fineness, is doubtless prompted by an industrial motive: to encourage the development of the domestic manufacture of fine knit or woven goods, embroideries, and laces—which are the main users of fine yarns above 80s or 100s—by affording them that part of their manufacturing material requirements which is not readily obtainable at home, at the lowest possible prices, unburdened by heavy import duties.

The imposition of high duties on the imports of such yarns may perhaps, in time, serve to foster the development of that branch of the domestic fine spinning industry. This is probably the motive which has prompted the high duties on very fine yarns in the case of both the United States and Germany. Despite the existence of high protective duties over an extended period of time, however, there has been little tendency discernible in the domestic industry of either country to extend its operations to any considerable extent to very fine yarns. The continued dependence of the fine yarns users of both countries upon foreign spinners for a large part of their supplies, as evidenced by their increasing imports, would seem to indicate one of two things. Either the cotton spinners of these countries have not found sufficient inducement in the volume or character of the requirements of very fine and specially prepared yarns to lead them to undertake their production for sale, even when substantially protected, or else the superiority and reputation of the imported yarns from the usual sources, mainly Great Britain and, to a slight extent, France and Switzerland—countries possessing the advantages of production in larger quantities and long-developed adaptation to the manufacture of yarns requiring high skill and special processing—

leads the consumers of such yarns to prefer the imported products, even when similar goods could be obtained from domestic manufacturers.

The two diverse policies above mentioned toward the importation of fine cotton yarns are well exemplified by a comparison of the duties of the various countries on yarns 120s and finer. It will be observed that France alone, of the important countries, advances the rate of duty above that point, providing for six groups above 120s with a sharply ascending scale of duties, from 11 cents per pound on 120s to slightly under 30 cents on yarns above 225s.[1] Italy, Germany, Japan, and Serbia continue the same fixed amount of duty per pound on "very fine" as on "fine" yarns, which renders the duty, in effect, a decreasing percentage in relation to the increasing value of the yarns as they go up in fineness. Neither Italy, Japan, or Serbia are importers of very fine cotton yarns, so that in the case of Germany alone, of the group, is the duty at all operative or of much consequence. And the German duty on gray singles above 102s is 4.3 cents a pound, which on fine yarns of this character, valued in 1914 at about a dollar a pound, probably did not exceed 4 or 5 per cent of the value of the imports, which is slight compared with the corresponding American duty on such yarns of 25 per cent ad valorem.

Belgium and Switzerland levy a nominal duty of about half a cent a pound on fine yarns. Austria admits all yarns above 110s free of duty. Imports into Canada are free above 40s, and as has been earlier indicated, all yarns are admitted free of duty into the United Kingdom and Netherlands, practically the only other users of any quantity of very fine yarns. With the exception, then, of France and Germany, it appears that no foreign country interested in the importation of very fine yarns imposes a duty of as much as 1 cent a pound on yarns above 120s. In contrast with this fact, it will be noted that the American tariff renders all gray single carded yarns above 99s dutiable at the basic rate of 25 per cent ad valorem, which in 1914 amounted to an average duty on such yarns of nearly 18 cents a pound.

Summing up, it appears from the above analysis that, with the exclusion of the four countries imposing notably high import duties on all commodities, the limits and approximate average height of the basic duties on the various grades of cotton yarn, levied by the principal foreign countries, compared with those of the United States in 1914 and 1918, are as follows:

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[1] The sharply ascending scale of French duties on fine yarns is accounted for by the considerable development of the fine end of the French spinning industry, particularly around Lille, calling for high protective duties against competitive imports.

Comparative height of basic import duties on cotton yarn.

[Duties of 25 foreign countries compared with those of the United States in 1914 and 1918.]

Degree of fineness (by yarn count ranges).	Of 25 foreign countries.			Principal advanced countries (cents per pound).		Average duties on imports into the United States (cents per pound).	
	Number of countries with duties under 1 cent or free.	Number of countries with duties higher than the American.		Chief range.	Approximate average.	1914	1918
		1914	1918				
1s-40s (coarse and medium)	7	5	3	1-3	2	2¾	7¼
40s-80s (medium fine)	8	4	2	2-4	3	9½	21¾
80s-100s (fine)	9	3	2	2-5	3½	14	29¼
100s-120s (fine)	10	3	1	2-5	4	18	37¼
120s and finer (very fine)	11	3	1	3½-5	4½		

The salient deductions to be derived from the above comparison are as follows:

(*a*) Seven of the twenty-five countries considered admit coarse and medium yarns free of duty or at a nominal duty of less than 1 cent a pound. The number increases with the fineness of the yarn, until 11 of the 25 are seen to be admitting yarns 120s and finer at nominal rates or free.

(*b*) Conversely, while there were five countries whose duties on low-count yarns were higher than those of the United States in 1914, on fine yarns there were only three. In 1918, the duties of three countries exceeded the American on counts under 40s, and only one, Russia, collected higher duties than the American average on yarns above 100s in fineness.

(*c*) Compared with the principal industrially advanced countries, the American duties in 1914 were not much above the foreign average on coarse and medium yarns, under 40s—2¾ cents per pound versus 2 cents. On medium fine yarns, 40s to 80s, it was about three times the average—9½ cents versus 3 cents. On fine yarns, 80s to 100s, the average American duty was four times the foreign average, 14 cents versus 3½ cents. On very fine yarns over 100s, (no division being made in the American tariff at 120s, the real basic limit of "very fine" yarns), the average duty of the principal foreign countries was 4½ cents a pound, while the American duty in 1914 averaged almost 14 cents higher, that is, 18 cents.

CHANGES IN THE AMERICAN DUTIES FROM 1914 TO 1918 UNDER THE AD VALOREM SYSTEM.

The much higher basic duties on cotton yarn when imported into the United States than into other advanced countries, indicated by the foregoing analysis, and the growing disparity with the increasing fineness of the yarns, have been characteristic of the American yarn schedule even in normal times. The deductions as to relative height of duties indicated in (*c*) above represent the fiscal year 1914, the first year under the reduced duties of the Underwood Act of 1913, and the last year prior to the war. Since 1914, the comparative excess of the American import duties has become even more pronounced. For while practically all important foreign tariffs on cotton yarn are assessed at a fixed specific amount, and remained constant throughout the period, the American duties, being ad valorem, increased in amount to correspond with the increased market prices of the yarns. The rise in the price of raw cotton, and consequently of cotton products, has been one of the striking phenomena that devoped during the latter years of the war, and that has for the largest part continued into 1919. One of the unlooked-for results has been a marked increase in the import duties imposed upon all cotton products where the duties in the last act were ad valorem.

Without change in the nominal rates of duty on basic cotton yarn—5 per cent to 27½ per cent—the amount of duty collected per pound on imports during 1918 is seen to be more than double those in 1914, and several times the corresponding average duties of the principal foreign countries. This is particularly true of fine yarns, which form the bulk of our imports. Thus, leaving out of account both the groups of countries which impose very high duties, and the larger number which admit fine yarns free of duty or at a nominal rate of less than a cent a pound, the approximate average duty on fine yarns for the principal foreign countries in 1918 ranged from 3 to 4½ cents a pound, while importers into the United States paid in the same year an average of 12½ cents on yarns of the 40s to 49s range, increasing to 37½ cents on yarns over 100s in fineness, with an average duty on all fine yarns of 22.67 cents per pound.

On shipments of typical counts of very fine yarns, it is possible from the investigations of the commission, to present precise comparisons based on import invoices of the same yarns in 1914 and 1918. Thus, taking 140/2 as a typical yarn of the upper range of fineness, and also 220/2 as representing the finest count imported in both years, we find the following record of shipments in 1914 and 1918:

Description of yarn imported.	Rate of duty (per cent).	1914		1918	
		Invoiced price.	Duty per pound.	Invoiced price.	Duty per pound.
140/2 gray carded, gassed, prepared, lace yarns.......	25	$0.97	$0.245	$2.76	$0.69
220/2 gray combed, gassed, prepared, lace yarns......	27½	3.16	.87	4.26	1.17

The records thus indicate that the basic rate of 25 per cent ad valorem on gray carded yarns over 99s amounted to an actual specific duty on the finest grade imported under the basic classification of 24½ cents in 1914, and to more than double that, or 69 cents, under the higher level of prices prevailing in 1918. The corresponding duties on the same yarns if imported into the foreign countries having the highest tariffs, would have been: France, 13.13 cents per pound; Spain, 23.64 cents; and Russia, the highest of all foreign countries, 38.37 cents a pound.

Similarly, on the finest yarn imported in both years under the advanced classification of the American tariff, which carries an additional 2½ per cent ad valorem,— 220/2 combed lace yarn—the rate of 27½ amounted to an equivalent specific duty per pound of 87 cents in 1914, and $1.17 a pound on a similar shipment recorded in 1918. The highest foreign duties would have been: Spain, 26 cents a pound; France, 35.28; and Russia, 51.7 cents a pound. On imports of very fine counts, therefore, it would appear that the American tariff in 1918 levied a duty, measured in cents per pound, the highest of any known country, and fully double that of Russia, which is usually regarded as having the highest of all textile tariffs.

COMPARATIVE IMPORT DUTIES ON 78S COTTON YARN—THE PRINCIPAL AMERICAN IMPORT.

In both years for which the original invoices were studied by representatives of the Tariff Commission, No. 78 cotton yarn constituted the largest single count imported into the United States. No. 78 is, therefore, the most significant count for the purpose of a single-standard comparison of the relative import duties levied by the various countries. Table 30 shows the American and foreign import duties on 78s gray cotton yarn, in singles, 2-ply, and cabled; and on the 2-ply when also subjected to bleaching, dyeing, or mercerizing. All duties are expressed in terms of cents per pound, the American ad valorem rates having been converted into equivalent specific duties, based upon approximate prices for the various yarns specified, in 1914 and 1918.

When the 25 countries are ranked in order of the height of the duties on 78/2 gray carded yarns—there being no distinction between carded and combed in other tariffs than the American—the deductions are in large measure corroboratory of those drawn from the study of chart I. The prices, and hence the equivalent specific rates collected, on imports into the United States of this representative grade of cotton yarn about doubled from 1914 to 1918. Even in 1914, however, the American duties were far in excess of those of practically all the other leading countries. They ranked fifth in order of height, being exceeded only by Brazil, Russia, and Spain, countries with notably excessive duties on all imported commodities.

Moreover, when advanced beyond the gray carded state—either combed, doubled, or processed—the disparity between the American and the foreign duties increased. The comparison is presented in tabular form, and the precise amount of duty collected by the different countries on the basic yarn, and the relative increases imposed by each when the yarn is advanced in process or changed in condition is best seen from the table itself, which follows.

TABLE 30.—*Comparative duties of important countries on the principal count of cotton yarn imported into the United States, showing the duty on 78s, single, 2-ply, and cabled, and the differentials on 78/2 when processed.*

[All duties expressed in cents per pound.]

Rank of countries (in order of height of duty on 78/2 gray yarns in 1914).	78/1 gray.		78/2 gray.		78/2 carded yarns advanced beyond the gray.				78/9 cabled gray.	Notes.
	Carded.	Combed.	Carded.	Combed.	Bleached.	Dyed.	Mercer-ized.	Dyed and mercer-ized.		
1. Brazil	13.5	13.5	54.0	54.0	54.0	54.0	54.0	54.0	54.0	All but single yarns pay the same higher duty.
2. Russia	29.0	29.0	39.2	39.2	39.2	39.2	39.2	39.2	39.2	Ply yarns on spools, 32.1 cents; no differential if processed.
3. Spain [1]	15.8	15.8	17.3	17.3	18.9	18.9	18.9	18.9	19.7	All processes carry same differential.
4. United States	[2] (20)	[2] (22½)	[2] (20)	[2] (22½)	[2] (22½)	[2] (22½)	[2] (22½)	[2] (22½)	[2] (20)	
Duty in 1918	18.6	24.3	21.6	27.7	25.4	27.7	27.0	29.9	24.6	Computed from ad valorem rates, based upon approximate prices for yarns specified.
Duty in 1914	10.0	12.6	11.2	14.0	13.3	14.4	14.4	16.0	12.4	
5. France [1]	6.12	6.12	7.96	7.96	9.15	10.56	10.56	13.16	27.52	Note cumulative rates and high duty on yarns of more than 3 threads.
6. Italy [1]	5.25	5.25	6.56	6.56	7.87	7.87	6.56	7.87	6.56	No differential on mercerized or cabled yarns.
7. Turkey (1914)	5.5	6.2	6.2	6.8	6.5	7.0	7.0	7.9	6.8	Computed equivalent for flat 11 per cent ad valorem rate, United States prices.
8. Bulgaria [1]	3.50	3.50	4.38	4.38	4.82	5.69	4.38	5.69	4.38	No differential on mercerized, or cabled yarns.
9. Serbia [1]	3.50	3.50	4.38	4.38	4.81	5.25	4.38	5.25	4.38	No differential on mercerized or cabled yarns.
10. Japan	4.14	4.14	4.14	4.14	4.52	5.27	5.27	5.27	10.54	2-ply yarn as single, but high differential on cabled yarns.
11. Sweden [1]	2.43	2.43	3.04	3.04	4.86	4.86	4.86	4.86	3.04	Note same differential for bleaching, dyeing, and mercerizing.
12. Germany [1]	2.70	2.70	3.02	3.02	3.89	3.89	3.02	3.89	4.32	No differential for mercerizing.
13. Austria-Hungary [1]	3.95	3.95	2.57	2.57	3.30	3.85	3.39	4.04	5.23	Note lower duty on ply than single yarn of this count and cumulative duty on dyed and mercerized.
14. Switzerland [1]	1.75	1.75	2.18	2.18	2.88	3.06	2.88	3.06	3.5	
15. Norway [1]	1.46	1.46	1.46	1.46	2.43	4.24	1.46	4.24	1.46	Note higher differential on dyeing and none on mercerizing.
16. Denmark	1.22	1.22	1.22	1.22	1.22	3.65	1.22	3.65	1.22	Only dyed yarns dutiable at higher than basic rates.
17. Argentina	.88	.88	.88	.88	.88	1.09	.88	1.09	.88	Do.
18. China (1914)	.86	.86	.86	.86	.86	3.2	3.2	3.2	.86	0.86 cent basic rate, 3.2 cents is set as equivalent of 5 per cent.
19. Roumania [1]	.26	.26	.79	.79	.96	1.58	1.76	1.76	1.32	Note increasing differential on bleaching, dyeing, and mercerizing.
20. Belgium	.44	.44	.44	.44	.44	.44	.44	.44	.44	Yarns finer than 77s pay reduced duties and add no differentials.
21. Chile [4]										
22. United Kingdom [4]										

24. India[4]									
25. Canada[4]									

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[1] Countries having a double tariff system—general and conventional, or maximum and minimum. The lower scale of duties are more usually operative and are those here shown.
[2] Rate per cent.
[3] Free (after 1921, 1.66 cents per pound).
[4] Free.

GRADUATION OF DUTIES IN PRINCIPAL DIFFERENTIATED TARIFF SYSTEMS.

Of the 25 countries studied, four admit yarn free of duty, 7 impose one uniform rate on all counts, and 14 graduate the duties according to the fineness of yarn count. Chart I, in addition to visualizing the comparative height of the import duties on the different ranges of yarn, also indicates the groupings by yarn counts adopted by the various countries. While there is little uniformity discernible regarding either the size of the groups into which the counts are divided or the particular counts at which the divisional steps are fixed, a number of general tendencies are evident.

A majority of the countries divide counts under 40s into a number of groups for tariff purposes, the size of the group above that point enlarging with the increasing fineness of the yarns. This is readily understandable, in view of the fact that a difference of 10 or 20 counts represents a greater difference in fineness in the lower reaches of the scale than in the upper—40s, for instance, being twice as fine as 20s, while 140s is only one-sixth finer than 120s. A finely balanced schedule, based upon increasing fineness, would therefore provide for groups of a progressively increasing number of counts. This carefully balanced grouping is best exemplified in the German tariff, as seen from the chart. The American system provides for eight groups, three between 1 and 40, three between 40 and 80, all counts above 80 being comprised within two groups, with no further division beyond 100. All but one group under 60s are made up of 10 counts each, with the 60s to 79s and 80s to 99s groups consisting of 20 counts each.

The American schedule now differentiates roughly between the coarse (1s to 19s), medium (20s to 39s), and various ranges of fine yarns (40s to 49s, 50s to 59s, 60s to 79s, 80s to 99s, and all above 99s). The division into the various groups is not in exact accord with yarn grouping from a production or use viewpoint, and no break is made beyond 99s, all yarns above 99s being grouped together and paying the same rate of duty. The practice of a number of countries of setting the divisional steps of the yarn groups at such points as 24, 42, 83, and 120 is more closely in accord with significant divisions in yarn production, representing respectively the upper limit of coarse sheetings (24s); the limit of print cloth yarns made of ordinary American upland cotton (42s); the limit of medium fine yarns (83s); and the point above which yarns might fairly be termed "very fine" (120s). Moreover, in view of the fact that yarn as actually spun, particularly above 40s, centers largely about 10 and its multiples—for instance, 38s, 39s, 40s, 42s—the practice common to many *foreign tariffs of* setting the divisional steps on intermediate counts, not only is more consistent with the natural yarn groupings but brings it about that the yarn of closely related fineness belongs in the same class and pays the same rate of duty. This is not always the case under the method of grouping in the present American schedule.

Of more importance than the grouping of the yarns by fineness is the graduation of duties as between the various groups. With the exception of Canada, Belgium, Austria, and Switzerland, which reduce the amount of duty per pound or omit it altogether on yarns above a certain fineness, it would appear that the other foreign countries having graduated tariff systems impose a higher duty with each increase in range of fineness. From the viewpoint of relative production costs, this would seem the fair way of adjusting a balanced schedule designed to afford about the same proportional amount of protection all along the scale. For, as shown in Chapter VI and illustrated by chart F, the conversion cost, or cost of spinning a pound of cotton yarn, increases more rapidly than the rise in the number of the yarn, and particularly does the difference in conversion costs as compared with an older established industry, as that of Great Britain, tend to increase proportionally faster than the number of the yarn.

When the range of specific duties of the principal foreign countries is considered in relation to the increase in fineness of the yarn, however, it appears that with one exception the rate of duty per number per pound does not rise in full proportion to the increase in fineness. Thus, the German duty on number 18s gray single yarn is 1.19 cents per pound, or one-fifteenth of a cent per number; on 48s it is 2.38 cents, or one-twentieth of a cent per number per pound; whereas above 84s the duty is 3.02 cents, or about one twenty-eighth of a cent per number per pound. In other words, the duty on very fine yarns is proportionally about half the rate of duty on the lower counts. A similar relation is seen in the Japanese tariff, which imposes one-tenth of a cent per number per pound on 25s, and about one-nineteenth of a cent per number on 80s. The proportionate reduction in duty per number with increasing fineness is still more marked in the case of the Austrian tariff, which provides that 12s shall pay one-seventh of a cent per number per pound; 50s, one-fourteenth of a cent; 80s, one twenty-sixth; and 90s, one thirty-fifth of a cent per number per pound; yarns above 110s being altogether free of duty.

REDUCED DUTIES ON FINE YARNS AS STIMULUS TO DEVELOPMENT OF DOMESTIC CONSUMING INDUSTRIES.

Most advanced countries are importers of fine cotton yarns in varying amounts, and owing to the undeveloped state of that branch of the domestic cotton industries, the fine-yarn consuming industries in these countries, it has been seen, must rely largely on imports, and in increasing proportion as finer yarns are desired. It is significant, therefore, as indicated from the foregoing review, that it has been the policy of the principal countries to tax the imports of the finer yarns less heavily than the coarser counts. The only important exception is France, which taxes the imports of 18s gray singles one-eleventh of a cent per number per pound; 55s, one-fourteenth of a cent per number per pound; and then raises the proportional duty to one-eleventh of a cent per number on 120s, and about one-eighth of a cent per number per pound on yarns above 150s. This is explained by the exceptional position of France, already referred to, in possessing a cotton industry especially developed on the fine spinning end, beyond the status of other countries with the exception of Great Britain. It will be noted, however, that even for definitely protective purposes, the French duties on the highest ranges do not exceed one-eighth of a cent per number per pound.

For comparison, a similar analysis of the American tariff rates shows that in 1914 the duties collected on imports of gray carded yarns into the United States fluctuated around one-sixth of a cent per number per pound; the scaling up of the duties for each yarn group by 2½ per cent over the preceding group apparently serving just about to make up for the more rapid proportional increase in production costs than in the fineness of the yarn, resulting in an approximately uniform proportion of duty to fineness. With the sharp advance in market prices during the latter years of the war, the average American basic duty on cotton yarn advanced correspondingly to an average in 1918 of slightly more than one-third of a cent per number per pound.

Since the United States resembles the majority of foreign countries rather than France, in that there is no considerable domestic spinning industry of very fine yarns, the practice of the majority of foreign countries raises the question of the advisability of a similar policy for the United States, namely, taxing imports of very fine yarns proportionally less than those of medium fine counts, thereby stimulating the expansion of those domestic industries which use such very fine yarns in further manufacture, and tending at the same time to reduce the final price of the finished article to the American consumer. A particular illustration of the possibilities of such development in the United States under a low tariff on the raw material, the cotton yarn, is presented by the American lace industry.

In the years just prior to the war, the imports of cotton "laces, embroideries, etc., and articles made thereof" averaged over $35,000,000 a year. The domestic manufacture of fancy lace is a growth of comparatively recent years and still in the developmental stage. The free admission of lace-making machinery for a period of a year and a half from August 1909 to January, 1911, provided for by the tariff act of 1909, laid the foundation of the fancy-lace industry in the United States. It is reported, however, that its expansion has been hampered by the high duties levied on the imported fine yarns, which make up a large part of the raw material. The duty on laces, embroideries, and similar finished products is 60 per cent ad valorem, but in their representations to the Tariff Commission, the lace manufacturers have declared that the high duty on the yarns they are required to import—averaging about 25 per cent—leaves a differential between the raw material and the finished product which is not sufficient to allow them to compete favorably with the finished laces imported from England, France and Switzerland. The high duties have not stimulated the production of lace yarns within the United States, the manufacturers being still dependent for their supplies of the fine and specially processed lace yarns upon imports from Great Britain.

In a similar situation to cotton laces, as industries likely to be benefited by proportionally lower duties on fine yarns, is the manufacture of very fine cotton dress goods, such as fine muslins, voiles and lawns; and fine knit goods, such as fine cotton hosiery and knitted gloves, which are made largely of imported yarns, all these being articles which are or have been imported in considerable quantities in the finished state. Comparatively lower rates on the finer counts of yarn could be provided for, irrespective of the height of the general scale of duties levied on those grades of yarns which the American industry is prepared to supply, and which might be affected by considerable foreign imports.

DIFFERENTIAL DUTIES ON OTHER THAN BASIC YARNS—COMBED, DOUBLED, AND PROCESSED YARNS.

A review of the practices of the important foreign countries, in the adjustment of differential or additional duties upon the various processes to which yarn may be subjected beyond the basic state—gray carded singles—is valuable for comparison with the provisions of the American tariff, and is suggestive in its bearing upon any future revision of the American schedule.

COMBED YARNS.

The United States is alone in imposing a differential upon combed yarns, 2½ per cent ad valorem above the duty for carded yarn of the same count. No other country has been found to make any distinction in its import duties between carded and combed yarns.

PLY YARNS.

Under the present act imports of ply yarns pay the same rate of duty into the United States as single yarns. In preceding tariffs ply yarns paid a higher duty than singles. In most foreign countries ply yarns pay the duty for the component single yarns accordingto count, plus an additional or differential duty if single-twist (sometimes known as doubled yarns), and usually a further or higher duty on cable or multiple-twist yarns.

Single-twist yarns.—The French and Spanish raise the duty on the component single yarns when doubled, by a certain percentage, Spain 10 per cent, France 30 per cent. The more common practice, however, is for ply yarns to pay a duty applying to the component single yarn, plus a specific amount per pound. The additional amount varies from one-third of a cent, as in the case of Germany, to a differential of 40½ cents, in the case of Brazil, but most often single-twist ply yarns add about a cent a pound. In a number of cases the differential varies with the fineness of the yarn, being usually higher on the finer counts, although, as in the case of Austria-Hungary, the additional duty may be reduced or dropped above a certain count. The Russian tariff imposed a higher duty on ply yarns when not on wooden spools than when so put up. Two countries, Austria and France, impose a higher duty on doubled yarns when composed of more than two, or of more than three single strands.

Cable or twice-twisted yarns are variously provided for. They either pay the same duty as single-twist yarns (Italy, Russia, Japan, Bulgaria, Serbia, Norway, and Brazil) or they add a specific amount or a certain percentage to the duty on single-twist yarns (Austria, Spain and Roumania); or cabled yarns are dutiable at one flat rate applying to all counts, and one which is usually considerably higher than the duties on yarn simply doubled (Germany, Switzerland and Sweden). The French tariff assesses cable yarns of more than three strands not by weight or fineness, but according to length—four-tenths of a cent per 1,000 yards—as thread is more commonly treated. An interesting case is that of Japan, which admits 2-ply yarns at the same rates as singles—2-ply yarns being the chief grade of ply yarns used for manufacturing—but assesses "other yarns," presumably including doubled yarns of more than 2-ply as well as cabled yarns, at a flat rate which is several times as high as that on single or 2-ply.

PROCESSED YARNS.

Under the present American tariff, yarns subjected to one or more of the following processes, bleaching, dyeing, coloring, or mercerizing, *pay a single differential* of 2½ per cent ad valerem to the duty on gray yarn of the same count. In most foreign tariff systems, each process taxed is subject to a different duty, and most often a specific amount applying uniformly to all counts.

Bleached yarns carry an additional duty in almost all countries having a differentiated tariff system. Yarns when bleached add from a fraction of a cent up to 6 cents per pound to the duty on unbleached yarns of the same fineness, the differential in the advanced countries being usually somewhat under one cent a pound. Several countries add a fixed percentage to the duty on gray yarns, ranging from 15 per cent (France) to 20 per cent (Spain and Italy).

Dyed yarns more commonly carry a differential than any processed yarns. In several instances they are subject to the same additional duties as yarns when bleached; but more frequently pay a higher differential, which is usually at least double the differential on bleached yarns. The amount added varies from a fraction of a cent per pound over the gray to 8.75 cents over the bleached, the differential of most advanced countries on dyeing ranging between one and three cents over the basic rates for unbleached yarns. Two countries which increase the duty for bleached yarns by a percentage, add a fixed amount per pound for dyeing (France and Italy). Several (Austria, Belgium, Argentina and China) levy the same duty on bleached as on unbleached yarns, but advance the duty on yarns when dyed. In fact, a rather common method of classifying yarns makes the division as between colored and uncolored yarns, the bleached being included with the unbleached. Belgium removes the additional duty on dyed yarns when 77s or finer.

Mercerized yarns pay an additional duty only in a limited number of countries, and then usually add the same differential for mercerizing as for dyeing.

Gassed yarns pay no additional duty because of that process in any of the countries studied. On the contrary, Switzerland apparently favors the importation of gassed yarns, used in the domestic embroidery industry, by reducing the duty on 2-ply gassed yarns above 60s, to half that on yarns not gassed.

Polished or glazed yarns are subject to additional duties because of that process only when imported into France, Spain and Japan, and there the differential is the same as on mercerized yarns. The Canadian tariff provides that polished or glazed yarn, "when imported by manufacturers of shoe laces for use exclusively in the manufacture of such articles in their factories," shall be admitted free of all duty.

CUMULATIVE RATES.

Differential or additional duties may be distinct or cumulative; that is, yarn which has been subjected to more than one dutiable process may pay simply the duty of the process carrying the highest rate, or it may pay the combined duties of each of the processes involved. Practically every industrially advanced country imposing more than one differential—namely, Germany, France, Austria-Hungary, Switzerland, Sweden, and Japan—provide that duties shall be cumulative wholly or in part. They are all agreed in adding to the differential on ply yarns—which almost always carried a higher duty than singles—the additional duties provided for bleaching, dyeing, mercerizing, or other dutiable process. That is the chief form in which duties on cotton yarn are cumulated. The French and Austrian tariffs provide further that the differential shall be increased with practically each process—dyed and mercerized yarns, for instance, paying either the combined duties for both dyeing and mercerizing, or at least higher than for each separately, and if the yarns are plied, they add this combined duty to the differential provided for ply yarns.

The American tariff, it will be recalled, provides for but one scale of rates for all but the basic yarns—yarns which had been either combed, bleached, dyed, or mercerized, paying the duty for gray carded yarn of that count, plus 2½ per cent ad valorem. For example, 78/2 combed, dyed, and mercerized yarn will pay the same rate of duty as 78/1 simply carded and bleached. It would thus appear that the American cotton-yarn duties are not cumulative. In so far, however, as the value of the yarn is advanced as a result of each processing, the ad valorem duty increases in amount by 2½ per cent of the increased value, and the American ad valorem rate may thus be said to be automatically cumulative if 2½ per cent on the increased value be considered a fair differential to apply uniformly on each added process.

THE TREATMENT OF SEWING THREAD AND YARN FOR RETAIL SALE.

Special provision for sewing thread and yarn for retail sale, as apart from yarn for manufacturing, is a characteristic of practically every developed tariff system. In some instances sewing thread alone is singled out for special treatment, but more frequently all yarns intended for various types of handwork and put up for retail sale are included. Just what constitutes thread and yarn for retail sale is often defined in great detail, differentiating sometimes according to the number of the strands, but more often according to the use for which intended or the form in which it is put up. The precise descriptions vary considerably, as will be seen from the column (*k*) of the tabulation, where the essential wording of the original tariffs acts is reproduced.

Cotton thread and yarn for retail sale are generally assessed at fixed specific rates, so much per pound or per 1,000 yards, usually *without regard* to fineness, though separate rates are in a few instances provided according to process or put up. In almost every instance the duties are much higher than those levied upon ordinary yarn for manufacturing. The duty per pound varies widely with different countries, from less than 3 cents in the case of China to 54 cents on imports into Brazil. The present American schedule provides that "sewing thread, and crochet, darning, and embroidery cottons" shall pay a flat rate of 15 per cent ad valorem, irrespective of the count of yarn of which composed or of the condition in which imported. If composed of yarns 40s or finer, the flat 15 per cent duty allows the thread or yarn for handwork to come in at a lower rate of duty than if it were dutiable as ordinary yarn according to count.

The practices of other countries in regulating the importation of cotton yarn and thread, as analyzed in the foregoing sections of the appendix, serve as a background for the discussion in Chapter VI of possible changes and readjustments in the American tariff provisions, and are not without suggestive value.

APPENDIX—PART III

YARN PRICE DATA

APPENDIX.

PART III.

YARN PRICE DATA.

INVOICE PRICES OF 78s COTTON YARN, 1914 AND 1918.

The main count imported into the United States is 78s. In Tables 31 and 32, all 78s imported in the fiscal years 1914 and 1918, so far as ascertained by special investigations, are listed according to method of manufacture, ply, finish, and use. Original invoice prices, without discount, are stated in each case. In most instances yarns from England were invoiced in pence per pound; and those from the Continent in marks or in francs per kilogram or per pound. Occasional invoices read "cents per pound." In averaging the invoice prices for each type, the figures are uniformly stated in pence per pound, so that any desired comparison can be readily ascertained.

The average invoice value of the 663,975 pounds of 78s cotton yarn of all kinds, including single and ply, imported in the fiscal year 1914, was 29.74 pence, equal to 60.3 cents, a pound. Similarly the average invoice value of the 1,158,550 pounds of 78s cotton yarn of all kinds imported in the fiscal year 1918 was 56.54 pence, equal to $1.146, a pound.

Imports of 78s in 1914 consisted almost entirely of 78/2 gray yarn, whereas in 1918 almost half of the imports were of 78/1 gray yarn (imported mainly for the new sueded glove industry) and the remainder mainly of 78/2 gray yarn. Imports of 78s in multiple ply or in the bleached or dyed state were small.

Imports of 78/2 gray yarn averaged 27.74 pence for the carded and 31.15 pence for the combed in 1914, as against 53.89 for the carded and 61.65 for the combed in 1918. The difference between carded and combed imports of gray 78/2 therefore amounted in 1914 to 3.41 pence, or 6.82 cents, a pound, whereas in 1918 the difference amounted to 7.76 pence, or 15.52 cents, a pound. In other words, the combed 78/2 gray yarn sold for 12.3 per cent more than the carded 78/2 gray in 1914, whereas in 1918 the combed sold for 14.4 per cent more than the carded. These are averages for imports of substantial amounts and therefore may be taken as representative, though in each of the periods stated there were many imports of combed yarns at a price lower than other imports of carded yarns.

the relative prices varying according to the fluctuations of the market as well as the quality of the raw material and the character of the yarns.

In regard to the imports of 78s other than the 2-ply gray the amounts are hardly large enough to obtain fair averages to show variations due to doubling, to bleaching, or to dyeing. For instance the small imports of 78/1 in 1914 averaged higher in value than the imports of 78/2, due of course to the higher quality of the cotton used in the former. In 1918 there were large amounts of 78/1 combed and these averaged 55.86 pence as compared with 61.65 pence for smaller amounts of 78/2 combed; this is a difference of 5.79 pence, or 11.58 cents, between the single and the 2-ply.

In using the prices given in Tables 31 and 32 it should be remembered that they are invoice prices and that to them there must be added not only the duty but all intermediate charges such as freight, insurance (in 1918 also war-risk insurance), and the expenses and profits of the importer (when the importer is not the ultimate consumer), as well as the tariff duties, to obtain the competitive prices of imported yarns as sold on the American market. On 78s gray carded yarn, single or ply, the duty under the tariff act of 1913 amounts to 20 per cent; whereas on 78s, single or ply, that was combed, bleached, dyed, colored, or mercerized, the duty amounted to 22½ per cent. Averaging the amount imported by yarn agents and the amount imported by the ultimate consumers the expenses and profits of the importers was probably not over 10 per cent of the average price on the total imports. Ocean freight, insurance, and other expenses vary from year to year.

As a rough indication we may consider that the 60.3 cents per pound average invoice price of 1914 was increased by 35 per cent, which would give a competitive price on the American market for all 78s imported of about 81.4 cents a pound. Similarly we may consider that the $1.146 per pound average invoice price of 1918 was increased by 40 per cent, which would give a competitive price on the American market of $1.60. In 1918, at least, the English yarn could hardly have competed in price on the American market and the imports must have been due to quality, finish, or other considerations; this is in line with the testimony of importers.

The invoice prices on one count, 78s, afford a good indication of the price variations in regard to other counts. They bring out strikingly the facts that prices are continually varying and that the averages for any particular period are affected by so many factors, including differences in the relative amounts of various kinds imported, that unless comparisons are made on large-scale imports, they hardly afford a safe index as to the difference in price levels due to advancement by combing, doubling, or finishing.

It may be noted that while the invoice prices of 78s imported in 1914 averaged 60.3 cents, there was a variation from 21¾ pence, say 44.1 cents, up to 57 pence, say $1.155; also that while the invoice prices of 78s imported in 1918 averaged $1.146, there was a variation from 22¾ pence, say 46.1 cents, up to 93 pence, say $1.885, a pound. The extreme range of price differences, amounting to 162 per cent in 1914 and to 309 per cent in 1918 on this one count, was due more largely to differences in quality of material than to differences in methods of manufacture or of finishing. This is obvious, as a gray single yarn made of sea-island cotton might, and probably would, cost more than a more elaborately finished and put up ply yarn made of Peeler or ordinary Egyptian cotton. The fact that the level of yarn prices is hardly the same on any two consecutive days hardly needs to be mentioned.

Without taking the space to show average invoice prices on other counts, it may be stated that they prove that apparent anomalies as to price differentials are not confined to contrasts according to manufacture and finish but also extend to the yarn counts and that frequently low-count yarns sell at much higher prices than high counts, the main factor in this, as in the other case, being differences in the quality of the material. The publication of these prices will be of particular value if they cause a wider realization of the fact that in England as in the United States there are for each count of yarn, on any date taken, many different prices, due to differences in material, in method of manufacture, in finish, and in putting up, and if they result in a closer scrutiny of contrasts of prices here and abroad to make sure that like articles are being compared or that due allowances are made for such differences. To contrast prices of English mule-spun yarn with American ring-spun yarn may be justified by the fact that mule spinning predominates in England and ring spinning in America; however, it is not correct to contrast prices of cops, which is the yarn as spun, with cones, which have undergone winding after being spun, neither is it correct to contrast ordinary weaving yarn with high-class hosiery yarn, without allowances for such variations as would affect costs and prices.

Imports of 78s cotton yarn in fiscal year 1914 (in pounds).

Use.	78/1	78/2	78/3	78/4	78/6	78/12	Total.
Curtains		181,594	8,600				190,194
Lace	2,459	110,788	671				113,918
Cloth:							
Cotton		101,917					101,917
Mixed silk		18,390					18,390
Velvet		67,366					67,366
Mohair		3,407	312				3,719
Narrow fabrics:							
Hatbands		1,114		2,280			3,394
Ribbons		20,785					20,785
Woven labels		1,600					1,600
Typewriter ribbons	4,206						4,206
Knitting	6,673	110,135	6,441				123,249
Embroidery		13,205		314			13,519
Thread making			230				230
Harness twine					111	1,377	1,488
Grand total	13,338	630,301	16,254	2,594	111	1,377	663,975

Total 78s.	Carded.	Combed.	Total.
Gray	361,810	275,100	636,910
Bleached	7,228	17,138	24,366
Dyed	25	2,674	2,699
Grand total	369,063	294,912	663,975

TABLE 31.—*Invoice prices of 78s, single and ply, cotton yarns.*

[Imported in fiscal year ending June 30, 1914.]

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/1	Knitting	None	25		22½
	do	do		899	34
	do	do		154	36¾
	do	do		50	38¾
	Total		25	1,103	[1] 34.33
	Knitting	Mercerized	278		36¾
	do	do	321		38¾
	do	do	1,213		44¾
	do	do		165	36
	do	do		316	38
	do	do		819	40
	do	do		250	41
	do	do		213	42
	do	do		563	43½
	do	do		320	44
	do	do		221	44¾
	do	do		57	44¾
	do	do		750	45¾
	do	do		59	48
	Total		1,812	3,733	[1] 42.24
	Lace	Gassed, prepared		500	49
	do	do		995	51
	do	do		596	54
	Total			2,091	[1] 51.38
	Typewriter ribbons	None		1,038	29½
	do	do		3,168	30
	Total			4,206	[1] 29.88
78/2	Mohair goods	Gassed	700		26½
	do	None	1,800		26½
	Total		2,500		[1] 26.50

[1] Average.

Table 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Velvet	Gassed	1,500		26¼
	do	do	22,500		27
	do	do	4,000		27¼
	do	do	5,000		27½
	do	do		25,500	28¼
	do	do		6,000	29
	do	do		1,657	29½
	do	do		500	32¾
	do	do		709	33
	Total		33,000	34,366	[1] 27.85
	Mixed silk	Gassed	105		[2] 209.80
	Total		105		[1] 24.63
	Mixed silk	Mercerized, gassed	1,000		26¾
	do	do	526		28
	do	do	535		29
	do	do		570	28⅜
	do	do		787	28½
	do	do		1,172	28¾
	do	do		1,179	28⅞
	do	do		1,742	29
	do	do		642	29½
	do	do		394	31⅛
	do	do		900	31¼
	do	do		586	31⅜
	do	do		1,837	31½
	do	do		1,168	31¾
	Total		2,061	10,867	[1] 29.67
	Mixed silk	Mercerized		1,423	28½
	do	do		630	28¾
	do	do		300	37¼
	Total			2,353	[1] 29.68
	Cotton cloth	None	1,000		21¾
	do	do	600		23
	do	do	4,800		23⅜
	do	do	600		23½
	do	do	2,400		23¾
	do	do	1,048		24⅜
	do	do	500		24½
	do	do	600		24⅝
	do	do	5,320		25½
	do	do	1,580		26
	do	do		680	26
	do	do		3,017	26½
	do	do		1,000	31
	do	do		249	37¾
	Total		18,448	4,946	[1] 25.06
	Cotton cloth	Gassed	6,485		22½
	do	do	1,200		23
	do	do	1,270		23⅜
	do	do	3,734		23½
	do	do	2,693		23⅞
	do	do	2,397		24
	do	do	7,107		24⅛
	do	do	6,800		24¼
	do	do	22,481		24⅜
	do	do	3,100		24½
	do	do	3,770		24⅝
	do	do	4,900		24¾
	do	do	1,259		24⅞
	do	do	3,580		25
	do	do	4,551		25½
	do	do	200		26
	do	do	250		26⅞
	do	do	600		27
	do	do	2,016		28⅛
	Total		78,393		[1] 24.35

[1] Average.

[2] Marks per 100 pounds.

TABLE 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Curtains	Prepared	487		23⅛
	do	do	3,000		23⅞
	do	do	4,000		26¼
	do	do	250		26⅞
	do	do	750		27
	do	do	1,000		27⅛
	do	do	500		27¼
	do	do	250		31½
	do	do	7,600		32
	do	do	22,900		32⅛
	do	do	12,000		33
	do	do		2,457	22¼
	do	do		2,000	26¼
	do	do		8,000	32
	do	do		8,700	32½
	do	do		2,000	33
	do	do		3,000	33½
	Total		52,737	26,157	[1] 31.16
	Curtains	None	3,000		23¾
	do	do	5,000		30
	do	do	12,000		30½
	do	do	1,000		33
	Total		21,000		[1] 29.54
	Curtains	Gassed	3,500		26¼
	do	do	2,000		27¼
	do	do		1,000	23⅛
	do	do		1,000	23⅜
	do	do		3,000	23¾
	do	do		5,000	31¼
	do	do		2,000	32
	do	do		44,400	32½
	do	do		6,800	32⅝
	do	do		12,000	33
	do	do		1,000	33½
	Total		5,500	76,200	[1] 31.68
	Knitting	None	246		25⅛
	do	do	638		25¾
	do	do	1,080		32
	do	do	1,556		[2] 82
	do	do		600	[3] 2.27
	do	do		471	[3] 2.31
	do	do		300	28¼
	do	do		46	28⅜
	do	do		400	28⅝
	do	do		600	29
	do	do		95	30¼
	do	do		2,170	32¼
	Total		3,520	4,682	[1] 31.88
	Knitting	Mercerized	579		[3] 2.50
	do	do	1,040		[3] 3.07
	do	do	500		[3] 5.98
	do	do	1,219		[3] 5.13
	do	do	500		24½
	do	do	502		26¼
	do	do	514		28¼
	do	do	542		29¾
	do	do	586		31⅜
	do	do	599		31¾
	do	do	1,093		32½
	do	do	3,158		34¼
	do	do		10	35
	do	do		478	35½
	do	do		10	37
	Total		10,832	498	[1] 31.84
	Knitting	Gassed	1,046		25½
	do	do	2,728		26½
	do	do	994		28
	do	do	120		28¾

[1] Average. [2] Cents per pound. [3] Marks per pound.

Table 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
8/2	Knitting	Gassed		1,000	20¾
	do	do		1,000	27
	do	do		2,350	28
	do	do		300	28⅛
	do	do		5,800	28½
	do	do		450	28⅝
	do	do		500	30¾
	do	do		5,490	32½
	do	do		1,000	35$\frac{1}{16}$
	do	do		468	36
	do	do		500	[2] 62
	Total		4,888	18,858	[1] 29.19
	Knitting	Mercerized, gassed	1,158		23½
	do	do	1,500		24⅛
	do	do	1,500		24⅜
	do	do	589		27
	do	do	1,030		27½
	do	do	592		29
	do	do	599		29⅛
	do	do	560		29¼
	do	do	583		30
	do	do	600		30¼
	do	do	590		30⅞
	do	do	2,682		31
	do	do	1,715		31⅛
	do	do	1,208		31¼
	do	do	4,605		31½
	do	do	768		31⅝
	do	do	1,485		31¾
	do	do	1,188		31⅞
	do	do	967		32
	do	do	1,252		32⅛
	do	do	271		33½
	do	do	1,712		34
	do	do	478		35½
	do	do	1,092		36
	do	do	478		36½
	do	do	558		40
	do	do		800	28⅝
	do	do		12	31½
	do	do		10	32
	do	do		956	34
	do	do		317	35¼
	do	do		3,254	35½
	do	do		1,912	35¾
	do	do		970	36
	do	do		987	36½
	do	do		5,666	37
	do	do		10,172	40½
	do	do		296	41¾
	Total		29,760	25,352	[1] 33.90
	Lace	Gassed, prepared	11,700		25
	do	do	18,600		26
	do	do	2,000		26¼
	do	do	1,000		26½
	do	do	2,200		27¼
	do	do	5,600		27½
	do	do	1,000		28½
	do	do	1,000		[2] 62½
	do	do		900	25
	do	do		500	26
	do	do		250	26¾
	do	do		1,000	28⅓
	do	do		4,500	29
	do	do		1,000	29⅛
	do	do		1,000	29½
	do	do		1,000	30¾
	do	do		12,500	31½
	do	do		500	[2] 62½
	Total		43,100	23,150	[1] 27.59
	Lace	Mercerized	1,400		25
	do	do	249		25½
	do	do	500		25¾

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[1] Average.

[2] Cents per pound.

Table 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Lace	Mercerized	500		26¼
	....do	....do	500		26⅜
	Total		3,149		[1] 25.63
	Lace	Gassed	1,237		24¾
	....do	....do	419		25 1/16
	....do	....do	993		25⅛
	....do	....do	1,966		25¼
	....do	....do	64		25⅜
	....do	....do	2,747		26¼
	....do	....do	13,000		26½
	....do	....do	4,192		26¾
	....do	....do	778		27¼
	....do	....do	1,039		27½
	....do	....do	5,500		28
	....do	....do	750		30½
	....do	....do	210		39
	....do	....do	212		40
	....do	....do	132		47
	....do	....do		566	27
	....do	....do		51	27¼
	....do	....do		99	30
	....do	....do		2,195	33
	Total		33,239	2,911	[1] 27.32
	Lace	None		1,000	25
	....do	....do		1,000	29½
	....do	....do		600	35½
	Total			2,600	[1] 29.15
	Ribbons	None		1,074	[1] 35.50
	....do	Gassed	1,500		25
	....do	....do	150		25½
	....do	....do	3,474		26
	....do	....do		600	24¼
	....do	....do		1,200	25⅜
	....do	....do		1,158	26¼
	....do	....do		452	26⅞
	....do	....do		4,450	27
	....do	....do		3,615	27⅜
	....do	....do		587	28⅝
	....do	....do		600	29
	....do	....do		385	31½
	Total		5,124	13,047	[1] 27.41
	Ribbons	Mercerized, gassed		1,020	[1] 43
	Hatbands	None	1,013		[1] 24.75
	Embroidery	None	250		26⅞
	....do	....do		737	[2] 7.35
	....do	....do		605	[2] 7.50
	....do	....do		961	[2] 7.60
	....do	....do		578	[2] 7.70
	....do	....do		265	[2] 9.00
	....do	....do		1,130	[2] 9.10
	....do	....do		551	[2] 9.20
	....do	....do		92	[2] 10.40
	Total		250	4,919	[1] 35.06
	Embroidery	Gassed	468		25½
	....do	....do	500		27½
	Total		968		[1] 26.53
	Embroidery	Mercerized, gassed	1,000		31
	....do	....do		1,000	30
	Total		1,000	1,000	[1] 30.50
	Embroidery	Mercerized		246	[2] 10.10
	Total			246	[1] 43.62

[1] Average.

[2] Francs per kilogram.

TABLE 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/3	Curtains	Prepared	4,200		[1] 30
	do	None		4,400	[1] 29.50
	Knitting	Mercerized	978		35½
	do	do	952		[5] 99½
	do	do		478	35½
	Total		1,930	478	[1] 40.87
	Knitting	Mercerized, gassed	507		35½
	do	do		3,475	35½
	do	do		51	40
	Total		507	3,526	[1] 35.56
	Lace	Gassed, prepared	190		30½
	do	do		481	31½
	Total		190	481	[1] 31.22
	Sewings	None	230		[1] 24½
78/4	Hatbands	Gassed	1,087		25
	do	do	590		26⅞
	Total		1,677		[1] 25.66
78/6	Harness twine	None	111		[1] 33
78/12	Harness twine	None	400		33
	do	do		518	26½
	do	do		200	33
	do	do		118	43
	Total		400	836	[1] 31.23
	Harness twine	Polished	141		[1] 43

Count and ply.	Consuming industry.	Finish.	Carded.		Combed.		Pence per pound.
			Bleached.	Dyed.	Bleached.	Dyed.	
78/2	Lace	Prepared	368				[1] 57.00
	Mohair	None				907	[1] 33.50
	Mixed silk	Mercerized, gassed	500				[1] 27.00
	Mixed silk	Mercerized	514				27
	do	do	990				27¾
	Total		1,504				[1] 27.49
	Mixed silk	Luster	1,000				[1] 28.00
	Cotton cloth	None	130				[1] 27.50
	Knitting	Mercerized	287				[2] 6.54
	do	do			320		[3] 2.78
	do	do				300	[3] 2.78
	Total		287		320	300	[1] 33.33
	Knitting	Mercerized gassed			57		34½
	do	do			5,188		37
	do	do			5,072		39
	do	do			70		46
	Total				10,387		[1] 38.02
	Knitting	Gassed				451	[1] 27.25
	Lace	Gassed, prepared	1,839				[1] 29.50
	Ribbons	Gassed			520		[1] 30.50
	Hatbands	None				101	[3] [4] 2.89½

[1] Average. [2] Marks per kilogram. [3] Marks per pound. [4] Equivalent to 33.99 pence.
[5] Cents per pound.

TABLE 31.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Consuming industry.	Finish.	Carded.		Combed.		Pence per pound.
			Bleached.	Dyed.	Bleached.	Dyed.	
78/2	Labels	Gassed, prepared	320				27
	do	do	1,220				28
	do	do	60				30
	Total		1,660				[1] 27.87
	Embroidery	None			79		[2] 8.50
	do	do			309		[2] 9.90
	do	do			264		[2] 10.00
	do	do			208		[2] 10.30
	do	do			40		[2] 10.40
	do	do			229		[2] 11.90
	do	do			999		[2] 12.00
	do	do			116		[2] 12.05
	do	do			419		[2] 12.10
	do	do			456		[2] 12.45
	Total				3,119		[1] 49.56
	Embroidery	Gassed			511		29½
	do	do			277		30
	Total				788		[1] 29.08
	Embroidery	Mercerized			55		[2] 10.00
	do	do			230		[2] 10.10
	do	do			25		[2] 11.25
	do	do			498		[2] 12.60
	do	do			107		[2] 12.70
	Total				915		[1] 50.98
78/3	Mohair	None				312	[1] 33.63
78/4	Embroidery	None		25			[3] 5.65
	do	do			289		[3] 3.65
	Total			25	289		[1] 36.27
	Hat bands	None				603	[4] [5] 2.26

[1] Average.
[2] Francs per kilogram.
[3] Francs per pound.
[4] Marks per pound.
[5] Equivalent to 26.53 pence.

Total 78s, single and ply, cotton yarn imported in 1914.

Count and ply.	Manufacture and color.	Total quantity imported (pounds).	Average invoice value in pence per pound.
78/1	Gray carded	1,837	41.86
	Gray combed	11,133	38.55
	Bleached, carded	368	57.00
	Total	13,338	39.51
78/2	Gray carded	350,587	27.74
	Gray combed	254,246	31.15
	Bleached, carded	6,860	28.46
	Bleached, combed	16,849	39.73
	Dyed, combed	1,759	31.89
	Total	630,301	29.46
78/3	Gray carded	7,057	33.20
	Gray combed	8,885	32.34
	Dyed, combed	312	33.625
	Total	16,254	32.74

Total 78s, single and ply, cotton yarn imported in 1914—Continued.

Count and ply.	Manufacture and color.	Total quantity imported (pounds).	Average invoice value in pence per pound.
78/4	Gray carded	1,677	25.66
	Bleached, combed	289	34.75
	Dyed, carded	25	53.80
	Dyed, combed	603	26.53
	Total	2,594	27.15
78/6	Gray carded	111	33.00
78/12	Gray carded	541	35.61
	Gray combed	836	30.38
	Total	1,377	32.43
	Grand total	663,975	29.74

Imports of 78s cotton yarn in fiscal year 1918 (in pounds).

Consuming industry.	78/1.	78/2.	78/3.	78/9.	Total.
Curtains		248,000			248,000
Laces		82,275	4,997		87,272
Cloth:					
Cotton		25,567	3,195		28,762
Mixed silk		34,616			34,616
Velvet		80,500			80,500
Mohair		15,052			15,052
Narrow fabrics:					
Ribbons		18,198			18,198
Typewriter ribbons	4,952				4,952
Knitting					541,919
Gloves	482,443				
Other	12,947	45,758	771		
Electrical	74,080				74,080
Embroidery		21,170			21,170
Thread making			3,983		3,983
Harness twine				46	46
Grand total	574,422	571,136	12,946	46	1,158,550

Total 78s.	Carded.	Combed.	Total.
Gray	340,662	811,462	1,152,124
Bleached	970	5,206	6,176
Dyed	250		250
Grand total	341,882	816,668	1,158,550

TABLE 32.—*Invoice prices of 78s, single and ply, cotton yarns.*

[Imported in fiscal year ending June 30, 1918.]

Count and ply.	Use.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/1	Glove	None		4,375	37
	do	do		990	45
	do	do		26,428	47½
	do	do		4,000	50
	do	do		2,000	50⅛
	do	do		53,513	50½
	do	do		3,000	50⅝
	do	do		64,066	51
	do	do		13,500	51⅛
	do	do		22,500	51½
	do	do		6,000	51¾
	do	do		3,500	52½
	do	do		8,072	54½
	do	do		4,000	55
	do	do		3,500	55⅛
	do	do		4,036	55½
	do	do		26,738	56½
	do	do		5,000	56⅝
	do	do		9,000	57
	do	do		20,000	57⅛
	do	do		8,072	57½
	do	do		12,500	57⅝
	do	do		40,977	58
	do	do		29,500	58⅜
	do	do		33,142	59
	do	do		20,000	60⅜
	do	do		28,555	61
	do	do		11,560	66¼
	do	do		2,414	66½
	do	do		4,000	67
	do	do		270	67¾
	do	do		7,235	70
	Total			482,443	[1] 55.43
	Knitting	Mercerized	209		44¾
	do	do		1,494	67¾
	do	do		852	71½
	do	do		372	73½
	do	do		1,258	74½
	do	do		385	76
	do	do		1,383	77½
	do	do		844	79½
	do	do		5,383	81
	do	do		368	84
	do	do		399	86
	Total		209	12,738	[1] 77.03
	Electrical	None	1,359		55
	do	do		3,947	51½
	do	do		2,184	52
	do	do		4,094	52¼
	do	do		767	52½
	do	do		14,786	53
	do	do		4,205	53¾
	do	do		10,761	54
	do	do		752	54½
	do	do		26,504	55
	do	do		532	55½
	do	do		1,309	56¾
	do	do		2,032	57
	do	do		167	57½
	do	do		624	58
	do	do		57	63
	Total		1,359	72,721	[1] 54.05
	Typewriter ribbons	None		1,970	62
	do	do		2,982	73
	Total			4,952	[1] 68.62

[1] Average.

~~Table 32.—Invoice prices of 78s, single and ply, cotton yarns~~—Continued.

Count and ply.	Use.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Curtains	Prepared	500		51
	do	do	4,000		70
	do	do	6,000		71¾
	do	do		1,500	37½
	do	do		8,300	39
	do	do		1,000	45
	do	do		21,500	47¾
	do	do		500	48¾
	do	do		6,500	50
	do	do		3,500	55½
	do	do		14,000	56½
	do	do		9,100	64
	do	do		500	68
	do	do		9,500	68¼
	do	do		500	71¾
	do	do		12,500	77
	do	do		8,500	79
	do	do		2,000	80
	do	do		22,000	82
	do	do		3,000	84
	do	do		10,700	85¾
	Total		10,500	135,100	[1] 65.88
	Curtains	None	1,500		38
	do	do	5,500		44½
	do	do	1,500		46½
	do	do	8,500		52
	do	do	14,500		54
	do	do	3,000		57½
	do	do	7,400		60
	do	do	3,500		64½
	do	do	2,000		66⅓
	do	do	12,060		66½
	do	do	13,500		67½
	do	do	5,500		69½
	do	do	2,000		72½
	do	do	9,000		74½
	do	do	3,500		75½
	do	do		1,000	66⅛
	do	do		440	66¼
	do	do		7,500	66½
	do	do		500	72
	Total		92,960	9,440	[1] 62.27
	Lace	Prepared	2,500		46
	do	do	3,500		61
	do	do	4,035		61½
	do	do	2,000		68½
	do	do		2,000	57½
	do	do		1,000	66¼
	Total		12,035	3,000	[1] 59.54
	Lace	Gassed, prepared	10,940		39½
	do	do	1,973		45¾
	do	do	2,000		46¼
	do	do	3,837		47¾
	do	do	3,000		48¼
	do	do	1,745		50½
	do	do	445		52½
	do	do	4,500		53
	do	do	1,000		54
	do	do	1,000		56
	do	do	1,150		56½
	do	do	500		58
	do	do	1,500		58½
	do	do	900		59
	do	do	4,500		61
	do	do	2,000		63
	do	do	1,000		66½
	do	do	3,200		71
	do	do		5,500	57
	do	do		7,800	67½
	do	do		6,500	80½
	do	do		1,250	86
	Total		45,190	21,050	[1] 57.41

[1] Average.

Table 32.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Use.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Velvet	None		500	72
	do	do		1,000	73½
	do	do		1,000	85
	do	do	6,000		37½
	do	do	18,000		53½
	do	do	32,000		59¾
	do	do	20,000		60½
	do	do		1,000	67
	do	do		1,000	80
	Total		76,000	4,500	[1] 53.45
	Mixed silk	Gassed	9,605		34¾
	do	Luster	320		38
	do	do	340		52
	do	Gassed		968	22¾
	do	do		10,763	32¾
	do	do		2,850	37½
	do	do		600	37¼
	do	do		800	58¼
	do	Mercerized		500	38¾
	do	do		3,000	49
	do	do		3,100	49½
	do	Gassed, mercerized		1,770	49
	Total		10,265	24,351	[1] 33.10
	Cotton cloth	None		300	50½
	do	do	3,312		33¼
	do	do	981		39¾
	do	do	11,531		46
	do	do	7,321		46¾
	do	do	1,800		50¼
	do	do	322		54½
	Total		25,267	300	[1] 45.45
	Mohair goods	None	1,178		68
	do	do		484	52¾
	do	do		484	53¼
	do	do		1,011	53¾
	do	do		2,974	55¼
	do	do		5,475	66¼
	do	do		1,143	67
	do	do		518	69¾
	do	do		1,049	70¼
	do	do		736	70¾
	Total		1,178	13,874	[1] 63.21
	Ribbons	Gassed	1,800		36¾
	do	do	6,600		37
	do	do	6,600		53
	do	Gassed, mercerized		2,948	42¼
	Total		15,000	2,948	[1] 43.70
	Embroidery	Gassed, mercerized		464	40½
	do	do		1,500	41¼
	do	do		6,600	42¾
	do	do		1,500	45
	do	do		4,000	53¾
	do	do		2,500	59¾
	Total			15,964	[1] 48.04
	Knitting	Gassed	876		29¾
	do	do	16,729		30¾
	do	do	1,200		34¾
	do	do	1,699		45¼
	do	do	1,121		45¾
	Total		21,625		[1] 32.84

---

[1] Average.

TABLE 32.—*Invoice prices of 78s, single and ply, cotton yarns*—Continued.

Count and ply.	Use.	Finish.	Gray carded.	Gray combed.	Pence per pound.
			Pounds.	*Pounds.*	
78/2	Knitting	Gassed, mercerized	196		34¾
	do	do	535		36¼
	do	do	792		41
	do	do	11,927		45¾
	do	do		130	57¼
	do	do		1,655	58¾
	do	do		833	59¼
	do	do		182	69
	do	do		59	73½
	do	do		10	76
	do	do		150	80
	Total		13,450	3,019	[1] 47.86
	Knitting (lisle)	Gassed	1,111		45½
	do	do	3,002		45¾
	do	do	245		51¾
	do	do	1,812		54¼
	do	do	56		57
	do	do	1,016		59
	do	do	422		60
	Total		7,664		[1] 50.66
78/3	Knitting	Gassed, mercerized		104	66
	do	do		81	62
	do	do		553	79
	do	Mercerized		33	89⅜
	Total			771	[1] 75.90
	Cotton cloth	Gassed		103	82½
	do	do		2,771	84½
	do	do		318	90
	Total			3,195	[1] 84.98
	Lace	Gassed, prepared	338		52½
	do	do	2,244		56½
	do	do	1,365		93
	do	do		300	62
	do	do		200	67½
	do	do		300	79
	do	do		250	86
	Total		3,947	1,050	[1] 69.80
	Sewings	Gassed	3,983		42
78/9	Harness twine	Polished		46	93

Count and ply.	Use.	Finish.	Bleached carded.	Bleached combed.	Dyed carded.	Pence per pound.
78/2	Lace	Gassed, prepared	970			63½
	Ribbons	Polished			250	67
	Embroidery	Gassed		5,206		49
	Total		970	5,206	250	[1] 51.89

---

[1] Average.

Total 78s, single and ply, cotton yarn imported in 1918.

Count and ply.	Manufacture and color.	Total quantity imported (pounds).	Average invoice value in pence per pound.
78/1	Gray carded	1,568	53.63
	Gray combed	572,854	55.86
	Total	574,422	55.85
78/2	Gray carded	331,164	53.89
	Gray combed	233,546	61.65
	Bleached carded	970	63.50
	Bleached combed	5,206	49.00
	Dyed carded	250	67.00
	Total	571,136	57.04
78/3	Gray carded	7,930	55.31
	Gray combed	5,016	81.20
	Total	12,946	65.34
78/9	Gray combed	46	93.00
	Grand total	1,158,550	56.54

LANDED PRICES OF 78s COTTON YARN.

In order to illustrate the relative invoice and landed costs of 78s cotton yarn in 1914 and 1918, a large lace-curtain manufacturer importing direct from an English mill gave the following book figures on 78/2 brass bobbin yarn:

June, 1914:	*Per pound.*
Invoice price (32½d.)	$0.6609
Customs duty (22½ per cent)	.1487
Ocean freight	.01
Freight to mill	.01
Price landed at mill	$0.8296

June, 1918:	*Per pound.*
Invoice price (82d.)	$1.6673
Customs duty (22½ per cent)	.3751
Insurance, ocean freight, and war risk insurance	.0570
Freight to mill	.01
Price landed at mill	$2.1094

Terms were net 60 days. Packing and carriage to Liverpool paid by sellers. Before the war the marine insurance was paid by the seller and included in the invoice price. In 1914 the item of ocean freight from Liverpool to New York, figured on a large number of invoices, amounted to a trifle less than 1 cent, so we have figured on a flat rate of 1 cent as covering this item.

It is seen that, using the conversions as made by the manufacturer, this gray combed prepared yarn cost him, landed at the mill, 25.5 per cent above the invoice price in June, 1914, and 27.1 per cent above the invoice price in June, 1918.

If the above yarn had been imported by a yarn house and then sold to the lace-curtain manufacturer there would have to be added *at least* 10 per cent more for the expenses and profit of the *intermediary.*

ENGLISH PRICES COVERING THE RANGE OF LACE YARNS.

There have been shown in previous tables details of the invoice prices on all 78s cotton yarns imported during the fiscal year 1914 and the fiscal year 1918.

To show relative prices between counts it is necessary to consider the same class of yarns, and even this is affected by the fact that cost and price levels vary from year to year, also causing the relative increments between counts to change. As an illustration of the range of prices of a particular class of imported yarns on a particular date the best example would be the 2-ply gray lace yarns, for the reason that these extend over the widest range.

The following is a table of English quotations on lace yarns for the American market April 1, 1918. Prices were quoted both in pence and in dollars. The pence prices per pound were less 2½ per cent discount and 2½ per cent commission, free on board ship at an English port. The dollar prices were less 2½ per cent discount and 2½ per cent commission landed American port with freight and duty paid. Orders had to be definitely entered at sterling rates f. o. b., or at dollar rates, delivered free.

Yarn counts.	Quoted prices.		
	F. o. b. English port.		Delivered, freight and duty paid, American port.
	English prices (pence).	American equivalent.	
Gassed prepared carded grey:			
39/2	60	$1.22	$1.53
49/2	62	1.26	1.64
59/2	66	1.34	1.78
70/2	71	1.44	1.94
Gassed prepared supercarded grey:			
78/2	73	1.48	1.99
98/2	89	1.81	2.46
120/2	95	1.93	2.67
Gassed prepared combed grey:			
98/2	90	1.83	2.53
120/2	96	1.95	2.74
140/2	109	2.21	3.10
Gassed prepared combed grey sea-island:			
150/2	126	2.56	3.57
160/2	129	2.62	3.65
170/2	138	2.80	3.90
180/2	144	2.92	4.07
190/2	162	3.29	4.56
200/2	174	3.53	4.88
220/2	210	4.26	5.88
240/2	264	5.35	7.37
250/2	282	5.75	7.87
260/2	312	6.33	8.69

Bleached yarns were quoted at 4d. to 9d. over the gray, for instance, 150/2 gassed prepared combed bleached sea-island was quoted at 130d. f. o. b. or $3.69 landed; 200/2 bleached was 180d. f. o. b. or $5.06 landed; 260/2 bleached was 321d. f. o. b. or $8.94 landed.

The above list of selling prices serves to bring out several points. It is seen that between 39/2 and 49/2 the f. o. b. prices show a difference of only 2 pence or 4 cents, whereas the difference between 250/2 and 260/2 amounted to 30 pence or 60.8 cents a pound, the differential in selling prices between counts steadily increasing as the yarns increase in fineness. It is also to be noticed that between 98/2 supercarded gray and 98/2 combed gray there was a difference of only 1 penny (2 cents) a pound and the same is true as to the price difference between 120/2 supercarded and 120/2 combed.

The spread between the f. o. b. prices, and the delivered with duty paid prices, ranged from 31 cents a pound on 39/2 carded up to $2.36 a pound on 260/2 combed. The 10 per cent duty on the first accounted for 12.2 cents, and the 27½ per cent duty on the last accounted for $1.74 of the difference between the f. o. b. and the landed prices.

CONTRAST OF ENGLISH PRICES ON VARIOUS COUNTS AND QUALITIES.

The following quotations on cotton yarns for the American market were made May 8, 1917, by a large English firm that spins and doubles a wide range of counts. They are inserted to afford a comparison of prices on counts of different qualities:

Net prices on cotton yarns f. o. b. American market (in pence per pound).

	60/1	70/1	78/1	90/1	98/1	38/2	48/2	58/2	70/2	78/2	90/2	98/2
Glove yarns, hank or cheese—Gray combed Egyptian			55	57	63							
Hosiery yarns, mercerized, on cones:												
Carded brown Egyptian						58½	60	62¼	65¾	67¾	76¾	79
Combed Peeler						48½	50	52½	62¾	64¼	69¼	74¼
Hosiery yarns, mercerized, hanks:												
Carded brown Egyptian						46	46¾	48	50½	53	57¾	61½
Combed brown Egyptian						51¾	52½	54	57½	59	67¾	69¾
Combed Peeler						42¼	43	45¼	55	56	60½	62½
Hosiery yarns, gray lisle:												
Carded brown Egyptian						42	43¼	44¾	46	48¼	53¼	56¾
Combed brown Egyptian						47½	48¾	51	53	54½	63¼	64¾
Combed Peeler						38¼	39¾	42¼	50¾	52	57¾	
Lace yarns:												
Carded										50¾		
Combed												67
Double-spun lace yarns:												
Combed	63½	68½										
Supercombed		70¼	85½	92½								
Sea-island lace yarns:												
Gray combed												
Bleached combed												
Label yarns—combed												68½
Curtain yarns:												
Supercarded								51¼	54½	58		
Extra supercombed										66½		
Extra supercombed sea-island												88
Supercombed seconds												

Net prices on cotton yarns f. o. b. American market (in pence per pound)—Continued.

	99/2	120/2	140/2	150/2	160/2	170/2	180/2	190/2	200/2	220/2	240/2	250/2	260/2
Glove yarns, hank or cheese—Gray combed Egyptian	......	......	......	......	......	......	......	......	......	......	......	......	......
Hosiery yarns, mercerized, on cones:													
Carded brown Egyptian......	......	86¾	......	......	......	......	......	......	......	......	......	......	......
Combed Peeler..	......	......	......	......	......	......	......	......	......	......	......	......	......
Hosiery yarns, mercerized, hanks:													
Carded brown Egyptian......	......	......	......	......	......	......	......	......	......	......	......	......	......
Combed brown Egyptian......	......	76	......	......	......	......	......	......	......	......	......	......	......
Combed Peeler..	......	......	......	......	......	......	......	......	......	......	......	......	......
Hosiery yarns, gray lisle:													
Carded brown Egyptian......	......	......	......	......	......	......	......	......	......	......	......	......	......
Combed brown Egyptian......	......	70¼	81	86¼	......	......	......	......	......	......	......	......	......
Combed Peeler..	......	......	......	......	......	......	......	......	......	......	......	......	......
Lace yarns:													
Carded........	......	......	......	......	......	......	......	......	......	......	......	......	......
Combed........	......	73½	82	......	......	......	......	......	......	......	......	......	......
Double-spun lace yarns:													
Combed........	......	......	......	......	......	......	......	......	......	......	......	......	......
Supercombed....	......	......	......	......	......	......	......	......	......	......	......	......	......
Sea-island lace yarns:													
Gray combed....	......	......	......	93½	96½	105¼	111	120	132	167	217	228	264
Bleached combed	......	......	......	97½	100½	109¼	115	125	137½	173	226	243	273
Label yarns—combed	......	75¾	86¼	93	......	......	......	......	......	......	......	......	......
Curtain yarns:													
Supercarded....	......	......	......	......	......	......	......	......	......	......	......	......	......
Extra supercombed........	......	......	......	......	......	......	......	......	......	......	......	......	......
Extra supercombed sea-island........	......	......	......	......	......	......	......	......	......	......	......	......	......
Supercombed seconds........	73	......	......	......	......	......	......	......	......	......	......	......	......

Referring to the above quotations the exporter furnished the following information as to the charge for putting yarns upon cones or tubes:

For gray yarns (i. e., not mercerized, bleached, dyed or prepared) the prices for cones or tubes would be exactly the same as for yarns in bundle, the cost of putting the yarn onto cones or tubes being no more than that of reeling it into bundles.

In the case of prepared, mercerized, dyed or bleached yarn the matter is different, as the spinner must first reel or warp the yarn in order that the mercerizer, etc., may deal with it and afterwards get in onto cones or tubes. This difference in cost is, I think, sufficiently shown as between the prices we give for mercerized yarn in hank and for the same yarn on cones, and you get a further comparison with the gray lisles in hanks which takes you back to practically the basis of the other two.

I should explain the word "prepared." This term shows that the yarn has been flattened. This process can only be done in hank and there is therefore, in yarn so treated, the extra cost of coning and spooling which would be just about 1 per cent less than the difference between mercerized hanks and mercerized spools.

A CONTRAST OF ENGLISH AND AMERICAN YARN PRICES IN 1913.

The following data as to English and American selling prices of cotton yarns was published by the Textile World Record in its issue of July, 1913, and affords a contrast for the period just before the enactment of the last tariff act. The editor stated that the English prices were obtained by its correspondent from the secretary of the Bolton Chamber of Commerce.

	English price per pound.	1913 tariff duty.	English price per pound plus duty.	Price domestic yarns per pound.
	Cents.	*Per cent.*	*Cents.*	*Cents.*
Carded warp:				
40s	29 -31	15	33¼-35¾	33
50s	31½-35	17½	37 -41	38
60s	34 -38	20	40¾-45½	44
70s	38 -42	20	45½-50½	....
Combed warp:				
70s	43 -48	22½	52¼-59¾	64
80s	47 -51	25	59¾-63¾	70
90s	50 -55	25	62½-68¾	80
Carded doubling filling:				
40s	27 -31	15	31 -35¾	33
50s	30 -34	17½	35¼-40	38
60s	32 -36	20	38½-43¼	48
70s	35 -39	20	42 -46¾	....
80s	38 -42	22½	46½-51½	....
90s	41 -45	22½	50¼-55¼	....
Combed doubling filling:				
70s	40 -45	22½	49 -55¼	64
80s	43 -47	25	53¾-58¾	72
90s	46 -51	25	57½-61¾	92

The above contrast from an independent source gives a fair comparison, though, as in the case of all such comparisons, its correctness depends on the care used in selecting exactly comparable yarns. To the English price plus duty there would have to be added freight, insurance, and other intermediate charges; also, where handled through a yarn importer, the expenses and profit of the importer, to get the actual competitive price on the American market. It is seen that the margin between the selling prices in England and in the United States widens with the increase in fineness, but that on ordinary counts below 60s the English could not compete in price on the American market with domestic yarns. Such a conclusion is in line with other testimony.

THE OFFICIAL MAXIMUM YARN PRICES OF 1918.

In accordance with an agreement between the Price-Fixing Committee of the War Industries Board and the War Service Committee of the National Council of American Cotton Manufacturers, there were established on July 1, 1918, maximum prices on certain standard cotton cloths. Differentials were subsequently agreed on for other cotton goods. On August 24, 1918, there were established maximum *selling prices* on cotton yarns.

These "Government prices," as they were called, were announced as applying to all sales up to October 1, when there was to be a revision based on cost and price data to be supplied by the manufacturers. On September 25 it was announced that in the absence of the receipt of sufficient data for a more accurate adjustment of prices those already established would be continued to November 16. At the request of the War Industries Board an extensive investigation of cotton mill production costs was undertaken by the Federal Trade Commission, but the armistice occurred before this work could be completed. By agreement the operation of the existing schedule of fixed prices was extended to December 31, 1918, and then terminated.

During the war prices had been increasing, and in the early part of 1918 the huge textile purchases made or contemplated by the American Government caused the market to advance by leaps and bounds. In establishing maximum prices on cotton yarns and cloths the main idea was to stabilize a run-away market and to peg the advance until fair prices could be figured on the basis of actual conditions. It was realized that the fixed prices, although a reduction from the crest of the speculative wave, were considerably above costs, but the necessity of stimulating production was deemed paramount at the time and the representatives of the Government also considered the fact that the excess profits tax would insure part of the exceptional margin reverting to the Treasury. The manufacturers continued to make record earnings and the excess profits tax yielded large returns. Owing to the termination of hostilities the tentative schedule of prices was not revised as contemplated.

It may be noted that though the level of the official prices was very high there was a steady decline in the imports of cotton yarn. This was due to the fact that the normal slight margin between the price of cotton in England and in the United States had widened to such an extent that English yarns were costing even more than the American, and there could be no imports except of specialties unobtainable here.

Although the maximum yarn prices as arranged by the manufacturers and sanctioned by the Government had little relation to actual costs, they are interesting as showing what the manufacturers themselves regarded as fair differentials at that time between different counts and qualities.

For instance, on 40s yarn made of $1\frac{1}{16}$ to $1\frac{1}{8}$ inch staple, the differential between carded and combed, and the differential between single and ply, were set at the same figure, which would imply that the cost of combing 40s was the same as the cost of doubling 40s.

The fact that on any particular date there are many and widely varying prices on the same count is clearly illustrated; for instance, the Government prices on 36s, single and ply, were as follows:

	Price per pound.	
	36/1	36/2
Carded weaving yarn:		
Warp twist of middling upland cotton	$0.835	$0.86
Warp twist of strict to good middling cotton	.86	.885
Warp twist of 1 1/16 to 1⅛ inch staple cotton	.90	1.015
Carded hosiery and knitting yarns:		
Made of 1 1/16 to 1⅛ inch staple cotton	.875	.99
Combed yarn, weaving or knitting:		
Made of 1 1/16 to 1⅛ inch staple cotton	1.025	1.14
Made of 1⅛ to 1¼ inch staple cotton	1.075	1.19
Made of 1¼ to 1⅜ inch staple cotton	1.175	1.29

It is seen that the official prices for 36/1 ranged from $0.835 to $1.175, a difference of 41 per cent, whereas on 36/2 they ranged from $0.86 to $1.29, a difference of 50 per cent. The Government prices were adjusted for weaving and knitting qualities and if they had included specially processed yarns for the lace and other special industries the price ranges would have been even greater.

GOVERNMENT MAXIMUM YARN PRICES PROMULGATED AUGUST 24, 1918, AND CONTINUED TO DECEMBER 31, 1918, ON WEAVING AND HOSIERY QUALITIES.

Prices, in cents per pound, for carded warp twist yarns, made from not better than middling upland cotton follow:

SINGLE YARN.

Count	8 and below	10	12	13	14	16	18	20	22	23	24	26	28
Price	57½	58	59	59½	60	61½	63	64½	66½	67½	68½	70½	72½

Count	30	32	34	35	36
Price	74½	77½	80½	82	83½

For above yarns made of strict to good middling cotton an advance in price of 2½ cents per pound is made, making schedule for such yarns as follows:

Count	8 and below	10	12	13	14	16	18	20	22	23	24	26	28
Price	60	60½	61½	62	62½	64	65½	67	69	70	71	73	75

Count	30	32	34	35	36
Price	77	80	83	84½	86

For above yarns made of staple cotton of strict to good middling grade, not less than 1 1/16 inches and not over 1⅛ inches, an advance in price of 4 cents per pound is made over above schedule, making prices for such yarns as follows:

Count	36	38	40	42	44	46	48	50
Price	90	92	94	96	98	100	102	104

The basic price is on No. 8 and below:

Over 8 and not over 10 rise of ¼ cent per number.
Over 10 and not over 14 rise of ½ cent per number.
Over 14 and not over 20 rise of ¾ cent per number.
Over 20 and not over 30 rise of 1 cent per number.
Over 30 and not over 36 rise of 1½ cents per number.

On yarns of staple cotton in counts 36 to 50 the rise is 1 cent per number.

For ply yarns prices are as follows:

On yarns made of nor better than middling upland cotton for 2-ply to 7-ply, 1 cent per pound has been added to the single-yarn prices for twisting counts 8s and below and not over 10—

1½ cents per pound for counts over 10 and not over 14.
2 cents per pound for counts over 14 and not over 20.
2½ cents per pound for counts over 20 and not over 36.

making prices as follows:

Count	8 and below	10	12	13	14	16	18	20	22	23	24	26	28	30
Price	58½	59	60½	61	61½	63½	65	66½	69	70	71	73	75	77

Count	32	34	35	36
Price	80	83	84½	86

On yarns made of strict to good middling cotton for 2-ply to 7-ply, 1 cent per pound has been added to the single-yarn price for counts 8s and below and not over 10—

1½ cents per pound for counts over 10 and not over 14.
2 cents per pound for counts over 14 and not over 20.
2½ cents per pound for counts over 20 and not over 36,

making prices as follows:

Count	8 and below	10	12	13	14	16	18	20	22	23	24	26	28	30
Price:	61	61½	63	63½	64	66	67½	69	71½	72½	73½	75½	77½	79½

Count	32	34	35	36
Price	82½	85½	87	88½

SPECIAL.

For twisting any of above yarns in counts 8s to 12s in plies 8 to 12 ply, an advance of 1 cent per pound is made over prices named above for 2-ply to 7-ply, and for twisting them 13-ply to 60-ply an advance of 1½ cents per pound is made over prices named for 2-ply to 7-ply.

For Brownell or Haskell-Dawes tube twisted yarn in counts 8 to 12, an advance is made of 4 cents per pound over the price for singles.

On yarns made of strict to good middling staple cotton, not less than $1\frac{1}{16}$ inches and not over 1½ inches, for any standard ply there is added to the price of the single yarn, 5 cents per pound on No. 10s and an additional ¼ cent per pound on each number finer than 10s, making the following prices:

Count	36	38	40	42	44	46	48	50
Price	101½	104	106½	109	111½	114	116½	119

FORM OF DELIVERY.

The prices named above are for commercial skeins, tubes, cones and section beams of standard put up.

For ball or chain warps 1 cent per pound extra will be added.

For reverse twist 5 cents per pound advance over regular twist will be added.

For cabling up to No. 30 a charge of 6½ cents per pound will be added to the price of single yarn.

TERMS.

Prices include the weight of cones or tubes on which yarn is wound and are net cash from date of shipment, and are f. o. b. cars shipping point. Prices include cost of selling.

PRICES FOR STANDARD CARDED HOSIERY AND KNITTING YARNS MADE OF WHITE COTTON.

FOR SINGLE YARNS.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	61	62	63	64½	66	67½	69½	71½	73½	75½	77½

For above yarns made of staple cotton, of strict to good middling grade, not less than $1\frac{1}{16}$ inches and not over $1\frac{1}{8}$ inches staple the following prices will apply:

Count	10 and below	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Price	65	66	67	68½	70	71½	73½	75½	77½	79½	81½	83½	85½	87½	89½	91½

The basic price is on 10s and below.

Over 10 and not over 14, rise of ½ cent per number.
Over 14 and not over 20, rise of ¾ cent per number.
Over 20 and not over 40, rise of 1 cent per number.

For ply yarns 5 cents is added to the price for No. 10s single and ½ cent per pound additional per single number up to 40s. This charge for twisting these high-grade yarns is made for the reason that yarns used in the knitting trade require more perfect manufacture than commercial weaving yarns. They require inspection and also an extra process called doubling. These charges are based on actual differential costs of mills making these yarns, making the following schedule for twisted yarns of standard carded hosiery and knitting quality made of white cotton:

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	66	67½	69	71	73	75	77½	80	82½	85	87½

And the following schedule for twisted yarns made of staple cotton of strict to good middling grade not less than $1\frac{1}{16}$ inches and not over $1\frac{1}{8}$-inch staple:

Count	10 and below	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Price	70	71½	73	75	77	79	81½	84	86½	89	91½	94	96½	99	101½	104

FORM OF DELIVERY.

On commercial tubes, cones, cops, or skeins in standard put up.

TERMS.

F. o. b. cars shipping point, net cash from date of shipment, 2 per cent, allowance to be made for cones. Prices include cost of selling.

PRICES FOR COMBED COTTON SINGLE YARNS BASED ON BASIC PRICE FOR NO. 10 AND BELOW. GRADE STRICT TO GOOD MIDDLING.

LENGTH OF STAPLE.

Not over $1\frac{1}{16}$ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	76	77	78	79½	81	82½	84	85½	87½	89½	91½

Five cents additional for over $1\frac{1}{16}$ inches and not above $1\frac{1}{8}$ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	81	82	83	84½	86	87½	89	90½	92½	94½	96½

Count	36	40
Price	102½	106½

Five cents additional for over $1\frac{1}{8}$ inches and not above $1\frac{3}{16}$ inches to $1\frac{1}{4}$ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	86	87	88	89½	91	92½	94	95½	97½	99½	101½

Count	36	40	45	50	55	60
Price	1.07½	1.11½	1.16½	1.21½	1.26½	1.31½

Ten cents additional for over 1¼ inches and not above $1\frac{5}{16}$ inches to 1⅜ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28
Price	96	97	98	99½	1.01	1.02½	1.04	1.05½	1.07½	1.09½

Count	30	36	40	45	50	55	60	70	80
Price	111½	117½	121½	126½	131½	136½	141½	156½	171½

Basic price No. 10 and below:

Over No. 10 and not over No. 14, ½ cent per number above No. 10.
Over No. 14 and not over No. 24, ¾ cent per number above No. 14.
Over No. 24 and not over No. 60, 1 cent per number above No. 24.
Over No. 60 and not over No. 80, 1½ cents per number above No. 60.

FORM OF DELIVERY.

Hosiery and knitting yarns on commercial tubes, cops, cones or skeins in standard commercial put ups, suitable for the hosiery, underwear and regular knitting manufacturers.

Warp yarns on commercial tubes, cones, skeins, section beams or warps.

Such yarns if made of higher twist than standard warp twist, or if put up in other than standard forms for delivery, or if specially made for special work, or specially inspected for removal of imperfections, shall be subject to such additional prices to cover additional costs as may be agreed upon between the buyer and seller.

All figures are based on prices net cash from date of shipment f.o.b. cars shipping point for yarns delivered at net weight, such prices to include the cost of selling.

PRICES FOR COMBED COTTON PLY YARNS BASED ON BASIC PRICE FOR NO. 10 AND BELOW. GRADE STRICT TO GOOD MIDDLING.

(For twisting, five cents has been added to No. 10, and one-quarter cent additional per (single) number up to 80s.)

LENGTH OF STAPLE.

Not over $1\frac{1}{16}$ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	82	82½	84	86	88	90	92	94	96½	99	101½

Five cents additional for over $1\frac{1}{16}$ inches and not above 1⅛ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28	30
Price	86	87½	89	91	93	95	97	99	101½	104	106½

Count	36	40	45	50
Price	114	119	125¼	131½

Five cents additional for over $1\frac{1}{16}$ inches and not above 1⅛ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28
Price	91	92½	94	96	98	100	102	104	106½	109

Count	30	36	40	45	50	55	60
Price	111½	119	124	130½	136½	142¾	149

Ten cents additional for over 1¼ inches and not above $1\frac{5}{16}$ inches to 1⅜ inches.

Count	10 and below	12	14	16	18	20	22	24	26	28
Price	101	102½	104	106	108	110	112	114	116½	119

Count	30	36	40	45	50	55	60	70	80
Price	121½	129	134	140½	146½	152¾	159	176½	194

FORM OF DELIVERY.

Hosiery and knitting yarns on commercial tubes, cones or skeins in standard commercial put ups.

Warp yarns on commercial tubes, section beams or warps.

All figures are based on prices net cash from date of shipment, f.o.b. cars shipping point, for yarns delivered at net weight, such prices to include the cost of selling.

Prices for No. 1 quality wrapping twine of 8s or coarser yarn:

	Cents per pound.
Any ply wound on cones or tubes packed in barrels or bales, or in cases in bulk	61
Any ply wound in 8 ounce or heavier balls, packed in barrels or cases, in bulk	61½
Any ply wound in small balls weighing 5 or 6 to the pound, packed in barrels or cases, in bulk	62
Any ply wound in small balls weighing 5 or 6 to the pound, packed in 5 or 10 pound cotton cloth sacks and 100 pounds in a bale	64

TERMS.

Prices are f.o.b. cars shipping point. Net cash from date of shipment and include cost of selling.

RELATIVE WHOLESALE PRICES AT MANCHESTER, ENGLAND, 1901–1919.

In the following table, published February 15, 1919, by The Economist, of London, the average price of the various commodities in the five years 1901 to 1905 has been taken as 100, and the market prices on the various dates given is calculated as a percentage of this basis:

Date.	American cotton.	Egyptian cotton.	Cotton yarn.	Cotton cloth.
Jan. 1—				
1901	105	108	108	97
1902	85	78	88	92
1903	88	104	101	96
1904	126	121	117	111
1905	121	92	88	101
1906	116	106	107	115
1907	105	136	123	111
1908	111	131	106	114
1909	91	114	96	104
1910	154	186	134	126
1911	147	144	136	142
1912	96	119	106	123
1913	130	134	126	129
1914	130	133	124	125
1915	82	83	87	99
1916	140	135	145	135
1917.				
Jan. 1	194	271	207	184
Feb. 1	195	286	207	180
Mar. 1	205	286	206	177
Apr. 1	234	309	210	183
May 1	231	324	208	186
June 1	259	365	221	194
July 1	354	359	291	246
Aug. 1	345	428	300	254
Sept. 1	332	389	306	263
Oct. 1	338	372	309	265
Nov. 1	384	445	336	290
Dec. 1	418	445	424	338
1918.				
Jan. 1	419	434	450	370
Feb. 1	430	394	477	396
Mar. 1	441	402	485	396
Apr. 1	450	421	514	427
May 1	412	417	521	428
June 1	399	402	559	445
July 1	421	398	597	465
Aug. 1	387	413	605	469
Sept. 1	473	415	672	538
Oct. 1	446	415	681	558
Nov. 1	417	405	660	538
Dec. 1	407	380	570	504
Jan. 1, 1919	404	376	500	496

APPENDIX—PART IV

ABSTRACTS OF DECISIONS OF THE COURTS, BOARD OF GENERAL APPRAISERS, AND TREASURY DEPARTMENT

APPENDIX.

PART IV.

ABSTRACTS OF DECISIONS OF THE COURTS, BOARD OF GENERAL APPRAISERS, AND TREASURY DEPARTMENT.

On July 22, 1865, the Treasury Department ruled that cotton warps, consisting of a large number of separate threads each several hundred yards long, grouped together to constitute the warp of a proposed fabric, had passed beyond the condition of yarn and were therefore dutiable under the general provision for manufactures of cotton. In consequence of this decision Congress, in the act of 1870, made specific mention of cotton warps, and listed them with ordinary yarns not wound upon spools. After that act and before 1883, when yarn, warps, and warp yarn were provided for irrespective of holders, warps wound upon spools in 1,600 ends or separate threads of 580 yards each in length, so arranged and knotted together as to constitute the entire warp of a proposed fabric, and warp yarn wound upon spools in lengths of 13,000 yards, were again classified as manufactures of cotton; but warps imported upon a spool 6 inches in length, constituting the center or core of a bundle about 22 inches in diameter, extending beyond the ends of the spool, were held dutiable under the provision for warps not wound upon spools. These decisions are reported in Treasury Decisions 1142, of 1872; 3651, of 1878; and 3949, of 1879.

Classification as manufactures of cotton was also claimed for so-called hair switches of colored thread cut to suitable length, and bundles of glazed cotton thread fit for use as thread as well as for the manufacture of imitation-hair switches, but in Treasury Decisions 1039, of 1872, and 2824, of 1876, respectively, they were held dutiable as cotton thread.

An effort was furthermore made without success to have crochet cotton, before it was separately provided for, admitted as a manufacture of cotton. Twisted thread of cotton wound on spools, and claimed to be so dutiable, was held in Treasury Decision 2540, of 1875, properly classified by the collector as spool thread.

Specific provision was made for crochet cotton, with darning and embroidery cottons, in the act of 1897. The entire clause became involved in litigation. In Calhoun *v.* United States (99 Fed. 424) the dutiable length of darning cotton in four 2-ply strands slightly twisted, in balls, was declared to be the length of the cotton in the condition in which imported and not the aggregate length of the strands composing it. The Board of General Appraisers followed this decision in a case upon darning and embroidery cottons. (G. A. 4817, T. D. 22649.)

In Loeb *v.* United States [150 Fed. 327 (reversing 143 Fed. 698)] the term "embroidery cotton" was found by the Circuit Court of Appeals for the Second Circuit to have, when the act of 1897 was passed, a well-known commercial meaning excluding 5-ply yarn put up on paper bobbins and universally wound and used on machines in embroidering. The proper classification was held to be as yarn. The law was declared not to make use the test. This decision was applied by the Board of General Appraisers under the act of 1897 to 2-ply yarn used on embroidery machines to lock the stitch on the fabric, and to yarn in skeins from 15,000 to 21,000 yards each. (G. A. 6544, T. D. 27915, and G. A. 6730, T. D. 28803, overruling G. A. 5372, T. D. 24560, upon thread in large skeins of about 72 inches perimeter measurement.)

These decisions limited embroidery cotton to hand embroidery yarn in small skeins.

A different conclusion was reached by the Court of Customs Appeals under a later act. The rate of duty on embroidery cotton was higher than the rates on yarn in the act of 1897, under which the Loeb decision, supra, was made. This was reversed in 1913. Free entry of embroidery machines for a time under the act of 1909 (par. 197) gave an impetus to machine embroidery, and in the act of 1913 (par. 251) a lower rate of duty was imposed on embroidery cotton than on regular yarns above 39s. In accordance with the decision in the Loeb case the Treasury Department continued to assess the yarn rates; importers, on the other hand, contended for the rate on embroidery cotton.

In a case (Straus *v.* United States, 7 Ct. Cust. Appls., 414, T. D. 36982) carried on appeal to the Court of Customs Appeals the Board of General Appraisers on January 22, 1917, classified as embroidery cotton yarn used on embroidery machines in the process of making fancy or ornamental designs on the face of the fabric, and classified as yarn, No. 60, 2-ply yarn on bobbins, in which form it is used as the bottom thread on embroidery machines to hold the embroidered design in position, the yarn itself not appearing on the face of the fabric. The court, adverting to the impetus given to machine embroidery by the act of 1909, supra, and reading the provision in paragraph 358 for "embroideries * * * and all articles or fabrics embroidered in any manner by hand or machinery" as indicating a purpose to place hand and machine products on a parity, held the term "embroidery cottons" not restricted to those used in hand embroidery or imported only in skeins, and sustained the importer's protests as to both classes of merchandise in issue. This decision was followed in abstracts 41239, 41620, 41916, 42034, 42068, 42455, 42511, 42525, and 42564.

In another case (abstract 42456) the importers failed to prove *that the* merchandise was embroidery cotton and the collector's classification *as* yarn was affirmed.

Mercerized yarn in 2-ply strands combined with a slight twist, in the gray, suitable only for use as embroidery cotton, was held by the Treasury Department (T. D. 35873, of 1915) to be dutiable as embroidery cotton.

In Downing *v.* United States (109 Fed. 885), construing the act of 1897, yarn dyed, glazed, and finished was classified according to the number of the yarn in the gray and also according to the weight of the goods at the time of importation.

Fancy yarns, containing at irregular distances rough particles of cotton material known as knickers or slubs, were also held (G. A. 6443, T. D. 27627) subject to duty as yarns according to number under that act.

Supercarded yarn, representing two processes of carding was held (abstract 20575, T. D. 29516) dutiable as carded yarn not combed or advanced beyond the condition of singles, and not as combed cotton yarn, under the act of 1897.

Rovings have also been judicially classified. In Dunham *v.* United States (87 Fed. 800) and G. A. 4399 (T. D. 20953) they were held dutiable as "cotton thread * * * in singles * * * not * * * advanced beyond the condition of singles by grouping or twisting two or more single yarns together" and not as manufactures of cotton, under the act of 1894. In succeeding tariffs roving has been given specific mention separate from yarn and thread.

There was less litigation upon spool thread than upon yarn. What "spool thread of cotton" comprehends was considered at length by the Board of General Appraisers in a case under the act of 1894 (G. A. 3609, T. D. 17435). The importation consisted of 2-ply cotton thread roughly wound upon spools, bobbins, or reels, which the board declared to be interchangeable terms. The collector's classification of the merchandise as spool thread was sustained.

The phrase "spool thread of cotton" as used in the act of 1897 was interpreted in connection with the added phrase "if otherwise than on spools or reels." The thread in issue was imported in skeins. Importers offered evidence to prove that the term was applied in commerce only to thread bleached or dyed and wound on spools. This view, however, was not taken by the Board of General Appraisers, which held (G. A. 6952, T. D. 30184, following G. A. 4674, T. D. 22080) that Congress intended to make the paragraph as enlarged include the merchandise in suit.

In another decision under the act of 1897 (G. A. 4061, T. D. 18748) embroidery cotton in skeins of about 21 yards each was held dutiable at one-half cent for each 100 yards contained in the case, and not at that rate for each skein. This construction was against the Government.

In the act of 1909 the phrase "if in skeins, cones, or tubes, containing less than six hundred yards each," was substituted for "if otherwise than on spools or reels." This provision was construed by the Treasury Department (T. D. 30175) to exclude embroidery cotton in small balls, which was classified under the provision imposing the 6-cent rate.

In a review of the legislation and litigation, the Board of General Appraisers held unfinished cotton thread in the gray, intended for, and, when completed, suitable for use as, sewing thread, dutiable as "spool thread of cotton," at 15 per cent ad valorem under paragraph 251 of the act of 1913, and not as cotton yarn under paragraph 250. Commercial testimony offered by the Government was declared insufficient to upset the former rulings of the board in the presence of a legislative intent to adopt them. (G. A. 8200, T. D. 37793; followed in abstract 43234.)

Under the act of 1897 artificial products were classified by similitude as cotton yarn. In one of the cases von Bernuth *v.* United States (146 Fed. 61) yarn made by spinning and twisting together a large number of fine fibers of cotton waste to imitate silk, and known as near silk was held dutiable by similitude as cotton yarn. A peculiar result followed the attempt to give effect to the decision in this case. In ascertaining the duty on the commodity as cotton yarn, it was found to be of a high grade as determined by number, in accordance with paragraph 302 of the act of 1897, and the rate of duty was much higher than would have attached had the classification been by similitude to silk yarn. Thereupon the importers sought relief from the consequences of their litigation, urging that its application would be ruinous to them. The importers agreeing to acquiesce in the classification of artificial or near silk by similitude to silk yarn as before, the desired relief was granted by the Treasury Department and the von Bernuth case was not applied.

Artificial horsehair made from cotton waste and used interchangeably with polished cotton yarn for making hat braids, was held in United States *v.* Eckstein (222 U. S. 130) to be similar in material and use to cotton yarn and dutiable accordingly by similitude under the act of 1897.

Under the act of 1909 cotton thread coated with cellulose or viscose and called "viscelline," although retaining its character as cotton yarn, was held in United States *v.* Eckstein (3 Ct. Cust. Appls. 75) dutiable under the provision for "artificial or imitation horsehair, by whatever name known or by whatever process made," and artificial silk waste in broken yarns or filaments, put through a combing process which eliminates any refuse material and leaves the artificial silk in the form of a mass of fibers resembling in appearance a cotton or ramie sliver, was held in G. A. 7466 (T. D. 33473) dutiable as cotton sliver by similitude.

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